

July, 1960
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CRPL-F 191 PART B

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PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
JULY 1960

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

SOLAR - GEOPHYSICAL DATA

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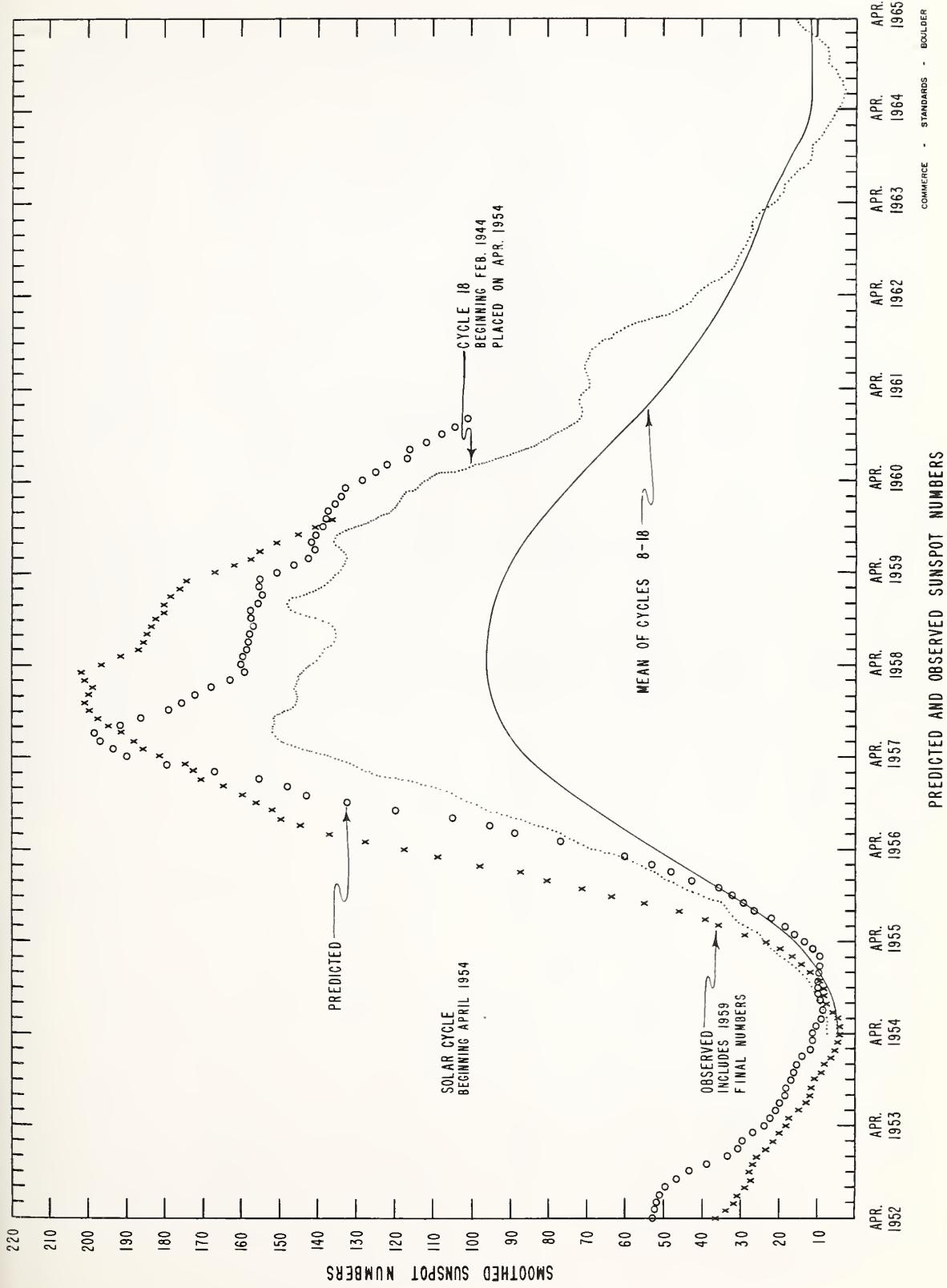
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INTRODUCTION

The descriptive text is published periodically or whenever context of the report is changed. The last issue in which the text appeared was CRPL-F189 Part B issued May 1960.

May 1960	American Relative Sunspot Numbers RA'	June 1960	Zürich Provisional Relative Sunspot Numbers R _Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	96	1	100	166
2	96	2	90	167
3	102	3	109	167
4	93	4	113	172
5	90	5	99	170
6	90	6	109	175
7	105	7	123	185
8	117	8	113	185
9	144	9	118	181
10	123	10	147	178
11	126	11	142	171
12	111	12	155	167
13	95	13	131	162
14	79	14	131	166
15	89	15	144	166
16	106	16	138	157
17	89	17	105	153
18	89	18	91	139
19	92	19	81	140
20	100	20	60	133
21	84	21	56	131
22	116	22	50	130
23	129	23	58	136
24	127	24	68	132
25	107	25	80	140
26	122	26	99	155
27	118	27	116	164
28	102	28	140	184
29	98	29	147	190
30	96	30	165	194
31	95			
Mean:		Mean:	109.3	161.9



CALCIUM PLAGUE AND SUNSPOT REGIONS

JUNE 1960

CMP June 1960	Lat	McMath Plage Number	Return of Region	Calcium Plage Data			Sunspot Data		
				CMP Values Area	Int.	History, Age	CMP Values Area	Count	History
30.5+	S14	5686	New	(200)	(1)	b / l	1	(50)	(1)
01.3	S18	5677	New	1200	2.5	b / l	1	220	3
02.0	N12	5678	*	2500	2.5	l - l	2	150	3
03.0	S12	5679	5653	4000	3.5	l - l	3	570	7
04.0	N06	5687	New	600	3.5	b / l	1	680	12
04.2	S16	5681	5653	(500)	(2)	l \ d	3		
04.6	N29	5680	5654	6800	3	l - l	2	240	11
05.5	S13	5682	5655	(1000)	(1.5)	l \ d	2		
06.2	N13	5683	5656	(900)	(1)	l \ d	3		
06.5	N28	5684	5654	(600)	(1)	l \ d	2		
06.7	N08	5688	5656	700	2.5	l - l	3	160	6
07.0	N28	5699	New	(1000)	(2.5)	b / l	1		
07.9	N12	5689	5656	1000	1.5	l \ l	3		
08.1	S08	5690	5657	1000	1.5	l - l	4		
09.5	S13	5691	5657	2200	2.5	l - l	4		
10.0	N12	5692	5658	1400	2.5	l - l	8	20	1
11.8	S14	5696	New	1200	2.5	b / l	1	120	6
11.8	S11	5708	New	(600)	(3)	b / l	1	(120)	(2)
12.3	N16	5693	5660	5000	2.5	l - l	3	200	18
14.1	N18	5694	New	3900	2.5	l - l	1	630	10
14.5	N08	5698	5661	300	1.5	l / l	3		
15.7	S13	5695	5663	8600	3	l - l	2	1010	9
16.9	N13	5718	New	(800)	(2.5)	b / l	1		
17.7	N23	5700	5664	(1200)	(1)	l \ d	2		
18.3	N01	5702	5668	600	2	l \ d	2		
18.5	N18	5701	5671	1100	2	l - l	2	120	3
18.5	S15	5703	5667	500	1.5	l \ d	7		
19.0	N00	5704	5673	500	2	l \ d	2		
19.1	S07	5705	5667	200	1.5	l \ d	7		
19.5	S15	5709	5667	(100)	(1.5)	l \ d	7		
21.1	N17	5706	5669	4100	3	l - l	4	70	1
21.8	S16	5707	New	900	2.5	l - l	1	(20)	(1)
22.1	N10	5710	5672	300	2.5	l \ d	2	20	1
23.1	S12	5711	5670	1600	2	l \ l	4		
23.3	N05	5712	5670	700	1.5	l \ d	4		
24.8	S03	5714	5670	200	1	l \ d	4		
25.1	N11	5723	New	200	2	b / l	1		
26.4	N18	5713	New	2400	3.5	l - l	1	730	5
27.0	N03	5716	5676	600	2	l \ d	2	(20)	(1)
27.7	N07	5733	New	300	2	b / l	1		
29.5	N08	5720	5678	2800	3	l - l	3	190	2
29.6	S08	5719	5679	3000	3	l - l	4	220	1
30.4	N08	5721	5687	2200	3	l - l	2		
30.4	S16	5725	New	1800	3.5	b / l	1	290	8

COMMERCE - STANDARDS - BOULDER

+ born on disk CMP in May.

* 5649 and 5652.

JUNE 1960

CNP Jun 1960	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)				
	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	
1	81	126	24	41	40	63	9	11	x	x	x	x	x	x	x	x	x
2	42a	64a	25a	17a	20a	26a	18a	22a	x	x	x	x	x	x	x	x	x
3	x	34a	11	21	51	85	16a	29a	x	x	x	x	x	x	x	x	x
4	64	89	x	x	x	x	x	x	10	34	52	10	16	107	157	15	25
5	x	x	x	x	x	x	x	x	14	24	x	x	66*	91	x	x	x
6	x	x	x	x	x	x	x	x	47	70	6	8	113	130	7	16	x
7	61a	74a	19a	20a	72a	100a	13a	20a	51	67	x	x	65	91	x	x	x
8	46	66	14	25	55	72	13	20	x	x	x	x	x	x	x	x	x
9	x	x	x	x	x	x	x	x	39	76	16a	26a	38	48	8a	19a	x
10	78	94	x	x	62	100	x	x	40a	63a	15a	22a	56a	76a	22a	47a	x
11	83	96	15	24	51	60	11	15	42	77	17	22	53	77	27	66	x
12	100	128	x	x	51	85	x	x	78a	115a	x	x	113a	207a	x	x	x
13	x	x	x	x	x	x	x	x	64a	102a	x	x	102a	161a	x	x	x
14	91	123	16	20	51	96	13	25	79a	116a	35a	65a	101a	161a	17a	43a	x
15	x	x	x	x	x	x	x	x	73	127	x	x	66	83	x	x	x
16	x	x	x	x	x	x	x	x	65	94	x	x	17	54	63	x	x
17	x	x	x	x	x	x	x	x	71	83	x	x	17	65	95	11	20
18	45	68	12	19	59	80	9	10	36	40	x	x	17	65	x	x	x
19	33	46	x	x	12	18	x	x	32a	40a	15	25	48	64	x	x	x
20	128	170	19	24	60	69	5	6	33a	50a	27a	40a	42a	60a	18	30	x
21	x	x	x	x	x	x	x	x	58a	101a	x	x	52a	70a	x	x	x
22	x	x	x	x	x	x	x	x	32	44	9	15	21	32	13	20	x
23	40	57	13a	33a	71	96	17a	23a	61	116	17	40	27	32	17	34	x
24	23a	27a	24a	44a	57a	25a	49a	46	x	x	x	x	63*	150	x	x	x
25	30	45	27	51	36	46	26	46	x	x	x	x	x	x	x	x	x
26	73a	99a	x	x	61a	76a	x	x	x	95	27a	x	x	55	69	27a	80a
27	66a	94a	25a	38a	69a	125a	x	x	60	50a	x	x	x	x	x	x	x
28	80	139	x	x	98	162	22a	49a	x	102	166	30a	40a	101	183	20a	40a
29	99	190	x	x	109	144	x	x	x	x	x	x	x	x	x	x	x
30	86	133	x	x	95	123	x	x	x	x	x	x	x	x	x	x	x

x = no observations.

a = index computed from low weight data.

* = yellow line observed.

Note: These coronal line intensities, expressed in millions of equivalent angstroms are believed to be correct to ± 10 percent, probable error, according to the calibrations of February-March 1950. All intensities from the Climax and Sacramento Peak Observatories during the years 1956-1959, inclusive, if multiplied by the factor 0.60, will be expressed in the same scale to a somewhat lower precision.

Intensities prior to 1956 cannot be compared precisely with those obtained later because of changes in observing and reduction techniques. They may be converted roughly to millions of equivalent angstroms by use of the table given by Billings and Varsavsky, 1955, Zs. F. Ap. 28, 160.

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE JUNE 1960	OBSERVED UNIVERSAL TIME			LOCATION	DURA- TION MINUTES	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE				APPROX. LAT.	MER. DIST.	ME-MATH PLATE REGION		
CAPRI S	01	0824	1340	0905	N28 E46	5680	316	3+	3	0903	18.00	31.00
KRASNAYA	01	0833	E 1003		N26 E44	5680	90	D	3	0904	20.60	32.60
ARCTRI	01	0834	E 1009	D	N30 E48	5680	95	D	3+			
SCHAUINS	01	0835	1030	D	N30 E50	5680	115	D	3			
WENDEL	01	0841	E 1308	D	N27 E47	5680	267	D	3+	0907	15.00	24.00
R O HERST	01	0848	E 1045	D	N29 E43	5680	112	D	3+			
ONDREROV	01	0855	E 1135	D	N29 E48	5680	50	D	3+			
ARCTRI	01	1037	E 1154	D	N29 E39	5680	110	D	2+	1	1118	5.00
MCMATH	01	1106	E 1230	D	N29 E45	5680	77	D	2	1	1154	7.50
SAC PEAK	01	1247	E 1600	U	N27 E44	5680	84	D	2	1	1115	7.00
ONDREROV	01	1646	E 1711		N29 E43	5680	193	D	2			
HUANCAYO	01	1649	E 1728		N30 E45	5680	25	1+	3			
WENDEL	01	1649	E 1700		N32 E45	5680	39	D	1			
MCMATH	01	1804	E 1815	D	N13 E02	5678	11	D	1	2	1657	1.80
MCMATH	01	2039	E 2150	D	N07 W90	5672	11	D	1?	1	1652	2.10
WENDEL	03	0536	E 0603	D	N18 W90	5672	71	D	1?	1		
STOCKHOLM	03	1107	E 1119	D	S18 W30	5677	27	D	1			
MCMATH	03	1109	E 1125	D	S08 W07	5679	12	D	1	3	1111	3.00
STOCKHOLM	03	1212	E 1223	D	S12 W06	5679	16	D	1	1	1110	3.10
ONDREROV	03	1244	E 1302	D	N15 E35	5688	11	D	1	3	1214	2.00
MCMATH	03	1900	E 1915		N15 E35	5688	18	D	1	3	1247	2.50
HAWAII	03	1902	E 1914		N29 E15	5680	15	D	1	2	1903	2.90
SAC PEAK	04	1426	E 1508		N34 E12	5680	12	D	1	2	1904	2.00
WENDEL	05	1351	E 1413	D	N27 W04	5680	42	D	1	3	2.72	14
SAC PEAK	05	2217	E 2346	U	N22 W18	5680	22	D	1			
ONDREROV	06	0455	E 0605		N26 W24	5680	89	U	2	1		
ONDREROV	06	0551	E 0608		N33 W36	5680	70	D	2	3	0458	3.40
WENDEL	06	0858	E 0929	D	N07 W50	5687	31	D	1	3	0553	2.70
ONDREROV	06	1410	E 1420		N08 W59	5678	10	D	1	3	1410	3.00
WENDEL	06	1732	E 1744	D	N08 W50	5679	12	D	1	2	2232	2.20
HAWAII	06	2232	E 2234	D	N29 W23	5680	2	D	1			
ONDREROV	07	0610	E 0622		N33 W22	5680	12	D	1	2	0610	1.50
ONDREROV	07	0829	E 0846		N10 E64	5693	17	D	1	3	0832	2.60
CAPRI S	07	0831	E 0842		N12 E66	5693	11	D	1	1	0834	3.60
ONDREROV	07	0958	E 1150		N27 W45	5680	112	1+	2	1	1040	2.60
CAPRI S	07	1002	E 1022		N25 W38	5680	116	D	1	3	1044	3.30
ARCTRI	07	1015	E 1032	D	N26 W46	5680	17	D	1	3	1015	2.50
STOCKHOLM	07	1046	E 1103	D	N26 W28	5680	17	D	1	3	1050	3.90
WENDEL	08	0732	E 0828	D	N29 W37	5680	56	D	2+	3	0750	15.00
CAPRI S	08	0736	E 0827		N33 W37	5680	51	D	2+	3	7.00	11.20
ARCTRI	08	0802	E 0823	D	N32 W36	5680	21	D	1+	3		
WENDEL	08	0759	E 0828	D	N10 W74	5679	29	D	1	3	0400	4.00
CAPRI S	08	0956	E 1038	D	N12 E52	5693	42	D	1	2	3.00	3.00
WENDEL	08	1125	E 1205		N29 W33	5680	2	D	1	3	1137	3.50

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE	OBSERVED TIME		UNIVERSAL TIME		LOCATION	DURA-TION	IM-POR-TANCE	MINUTES	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT			
		STANT	END	MAX. LAT.	MER. PHASE						APPROX. LAT.	MER. DIST.	MEAN-MATH PLATEAUS REGION	TIME			
{ MCMATH	08	1125	1220	D	1138	N30 W35	5680	55	D 1+	2	1138	2	2.00	8.00	24		
WENDEL	08	1135	E	1215	D	N29 W37	5680	40	D 1+	2	1756	7.35	6.00	7.20	4.50		
{ SAC PEAK	08	1146	1906	D	1756	N29 W39	5680	80	D 2	2	1755	5.20	4.30	7.20	Slow S-SWF		
{ MCMATH	08	1748	1900	D	1756	N30 W36	5680	72	D 2	3	1755	4.30	3.90	7.20	4.50		
HUANCAYO	08	1750	1837	D	1755	N28 W36	5680	47	D 2	3	1756	4.30	3.90	7.20	4.50		
HAWAII	08	1750	1926	D	1758	N26 W41	5680	96	D 2	3	1756	4.30	3.90	7.20	4.50		
HAWAII	08	2034	2038	D	2036	S06 E83	5695	4	D 1	3	2036	•90	•90	2.00	1.0		
LOCKHEED	08	2055	2205	D	2120	S12 E90	5695	70	D 1	2	2120	2.00	2.00	2.00	1.0		
{ LOCKHEED	09	0145	0230	D	0200	N32 W48	5680	45	D 1	1	0200	2.20	2.20	2.20	2.0		
HAWAII	09	0156	0200	D	0453	N28 W48	5680	4	D 1	3	0158	1.00	1.00	1.00	2.30		
{ ONDRE JOV	09	0437	E	0624	E	N31 W50	5680	14	D 2	3	0453	2.70	2.70	2.70	2.30		
CAPRI S	09	0626	E	0636	D	N33 W46	5680	10	D 1	3	0626	1.20	1.20	1.20	2.30		
{ ONDRE JOV	09	0927	E	0954	D	N31 W49	5680	27	D 1+	2	0927	2.00	2.00	2.00	2.0		
HAWAII	09	1004	E	1014	D	N28 W48	5680	10	D 1+	3	1005	2.90	2.90	2.90	2.90		
{ NDERHORST	09	1015	D	1022	D	N11 E78	5698	7	D 1	2	1017	5.20	5.20	5.20	5.20		
{ ONDRE JOV	09	1015	E	1032	D	S10 E74	5695	17	D 1+	1	1017	5.20	5.20	5.20	5.20		
ARCTERI	09	1018	E	1815	E	S11 E79	5695	□	D 1	3	1752	2.00	2.00	2.00	2.0		
MCMATH	09	1745	1752	E	2037	S13 E75	5695	30	D 1	1	2037	2.10	2.10	2.10	2.0		
LOCKHEED	09	2130	2030	D	2031	N30 W57	5680	80	D 1	2	2031	3.00	3.00	3.00	Slow S-SWF		
{ MCMATH	09	2150	E	2122	D	N31 W57	5680	95	D 1+	2	2034	2.10	2.10	2.10	2.0		
HAWAII	09	2042	E	2116	D	N25 W58	5680	58	D 1+	3	2043	3.20	3.20	3.20	3.20		
SAC PEAK	09	2035	E	2200	D	N32 W57	5680	34	D 1	1	2043	2.41	2.41	2.41	1.8		
{ LOCKHEED	09	2036	E	2210	D	S09 E73	5695	85	D 1	1	2043	3.20	3.20	3.20	2.0		
MCMATH	09	2038	E	2058	D	S12 E75	5695	94	D 1+	2	2040	4.00	4.00	4.00	4.00		
HAWAII	09	2314	E	2345	D	S05 E72	5695	20	D 1+	3	2043	2.00	2.00	2.00	2.0		
{ LOCKHEED	09	2316	E	2336	D	N33 W57	5680	31	D 1	1	2320	2.00	2.00	2.00	2.0		
HAWAII	10	0132	D	0200	D	S27 W59	5680	20	D 1+	3	2318	1.80	1.80	1.80	1.80		
HAWAII	10	0635	E	0730	D	0144	N15 E27	5693	28	D 1+	3	0144	2.00	2.00	2.00	2.0	
CAPRI S	10	0932	E	1000	D	0936	U	N30 W60	5680	55	D 2	3	0640	3.00	3.00	3.00	7.20
{ R O HERST	10	0935	E	1049	D	N30 W65	5680	28	D 1	2	0936	1.40	1.40	1.40	3.60		
CAPRI S	10	0937	E	1047	D	N30 W62	5680	74	D 2	1	1001	4.00	4.00	4.00	10.00		
STOCKHOLM	10	1435	E	1500	D	N29 W55	5680	10	D 2+	1	0947	5.00	5.00	5.00	2.00		
MCMATH	10	1505	E	1640	D	N12 E25	5693	25	D 1	1	1443	5.00	5.00	5.00	5.00		
ARCTERI	10	1546	E	1616	D	N16 E27	5693	54	D 1	1	1602	2.00	2.00	2.00	2.00		
{ SAC PEAK	10	1552	E	1720	D	N32 W70	5680	18	D 1	1	1708	2.45	2.45	2.45	2.45		
MCMATH	10	1702	E	1708	D	N30 W70	5680	101	D 1	2	1955	2.00	2.00	2.00	2.0		
LOCKHEED	10	1949	E	2024	D	N20 W70	5680	28	D 1	2	2015	2.08	2.08	2.08	2.08		
{ SAC PEAK	10	1956	E	2004	D	N30 W70	5680	66	D 1	1	2015	3.00	3.00	3.00	3.00		
MCMATH	10	2220	E	2210	D	N27 W90	5680	55	D 1	2	2237	2.00	2.00	2.00	2.00		
{ HAWAII	11	0112	D	0200	D	N18 E16	5693	48	D 2+	2	0124	5.60	5.60	5.60	3.0		
LOCKHEED	11	0115	E	0235	D	N16 E17	5693	80	D 2	1	0115	8.20	8.20	8.20	8.20		
WENDEL	11	1422	E	1444	D	S08 E58	5695	22	D 1	3	1511	•70	•70	•70	3.00		
CAPRI S	11	1507	E	1513	D	N26 W75	5680	6	D 1	3	1950	1.00	1.00	1.00	3.20		
HAWAII	11	1928	E	2010	D	N15 E05	5693	42	D 1	2	1954	1.00	1.00	1.00	1.00		
HAWAII	11	1952	E	2038	D	N27 W90	5680	46	D 1	3	1954	1.00	1.00	1.00	1.00		
LOCKHEED	11	2220	E	2315	D	S11 E54	5695	55	D 1	2	2237	2.00	2.00	2.00	2.00		

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME				LOCATION	DURAT. MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX. LAT.	MEATH. PLATE REGION				MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha		
{ MCMATH HAWAII	11 2225	2300	D		S13 E52	5695	35	D	1	2230	2.00			
	11 2242	E	2308		S14 E54	5695	26	D	1	2242	1.00			
CAPRI S	12 0600	E	0720	1442	S14 E53	5695	80	D	2	0605	6.00	10.20		
SAC PEAK	12 1356		1442	1428	N30 W90	5680	46	D	1	3	3.93	2.4		
{ LOCKHEED HAWAII	12 1900		1955	1927	N35 W90	5680	55	D	1	1927	2.00	2.0		
	12 1924		1934	1928	N32 W90	5680	10	D	1	3	1.40			
LOCKHEED	12 1905		2340	1916	N21 E04	5693	55	D	1	1916	2.00	1.0		
SAC PEAK	12 2326		D	2330	U	N20 E20	5694	14	D	1	3.16	1.8		
LOCKHEED	13 0023		0054	0030	S14 E36	5695	31	D	2	0030	1.20	1.0		
{ WENDEL	13 0547	E	0633	D	S17 W18	5696	46	D	1					
{ ONDREJOV	13 0556	E	0645		S20 W20	5696	49	D	1	0559		2.30		
	13 0725		0755	0736	N18 W30	5693	30	D	2	0736		3.80		
{ WENDEL	13 0731		0813		N18 W27	5693	42	D	2					
CAPRI S	13 0731		0834		N18 W27	5693	63	D	3	0740	5.80	7.00		
{ WENDEL	13 0759		0818		N12 W16	5693	19	1+						
CAPRI S	13 0759		0818		N08 W21	5693	19	1	3	0808	3.00	6.00		
CAPRI S	13 1028		1051		S12 W30	5691	23	1	3	1038	2.50	3.00		
{ ONDREJOV	13 1036	E	1048	D	S09 E32	5695	12	D	1+	3	1040		2.60	
	13 1237	E	1305	D	N18 W30	5693	28	D	1					
{ ONDREJOV	13 1238		1257	1239	N17 W29	5693	19	D	1	3	1239			
CAPRI S	13 1239	E	1250		N18 W29	5693	11	D	1	3	1242	2.00	2.30	
SAC PEAK	13 1708		1800	1714	N17 W34	5693	52	D	2			2.40		
LOCKHEED	14 0001		0045	0015	N08 W36	5693	44	D	1	0015	2.30	2.0		
{ HAWAII	14 0014	E	0042		N14 W38	5693	28	D	1	0014	1.70	3.0		
{ STOCKHOLM	14 1048	E	1104		N15 W28	5693	16	D	1	1049	2.00	2.40		
{ CAPRI S	14 1055	E	1103	D	N10 W30	5693	8	D	1	1057	3.50	3.90		
{ CAPRI S	14 1337	E	1408		N10 E16	5693	31	D	1	1345	2.00	2.10		
{ HUANCAYO	14 1338	E	1446	1342	S10 E18	5695	68	D	1	2	1340	2.30	2.40	
LOCKHEED	14 1727		1740	D	S13 E20	5695	13	D	1	1736	2.70	2.70		
HUANCAYO	14 1730		1749	1737	S11 E24	5695	19	D	1	1737	2.20	2.40		
{ HUANCAYO	14 1825		1850	1828	S12 E19	5693	25	1+		2	1828	4.20	4.50	
	14 1826	E	1838	D	S08 E20	5695	12	D	1	1826	1.90	2.80		
{ HAWAII	14 1831	E	1834	D	S13 E20	5695	3	D	1	1832	2.30	2.30		
LOCKHEED	14 1838	E	1842	D	S11 E19	5695	4	D	1	1838		2.00		
MCMATH	14 2200		2323	2228	S14 E08	5695	83	D	1	2	2228	4.20	2.0	
{ HAWAII	14 2202		2316	2226	S10 E11	5695	74	D	2	2226	2.50			
CAPRI S	15 0635	E	0749		S09 E08	5695	74	D	2	0702	5.50	5.50		
{ LOCKHEED	15 2347		0030	2356	N18 E35	5701	43	D	1	2356	2.00	2.0		
HAWAII	15 2348		0036	2354	N23 E33	5701	48	1+	3	2354	2.00			
{ CAPRI S	16 0647		0710		S12 W02	5695	23	D	2	0700	5.50	5.50		
{ ONDREJOV	16 0649	E	0719		S11 E01	5695	30	D	2	3		2.80		
CAPRI S	16 0730		0736		N15 E67	5706	6	D	1	0733	1.00	2.60		
CAPRI S	16 0808		0950		N12 E65	5706	102	D	2	3	0908	3.00	6.90	
{ STOCKHOLM	16 1037	E	1044		S13 W05	5695	7	D	1	1039	2.00	2.10		
SAC PEAK	16 1338		1406	1346	N20 W70	5693	28	D	2			2.83		
{ ONDREJOV	16 1339		1402	1342	N20 W65	5693	23	D	2	1342	3.80	3.80	17	

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE JUNE 1960	OBSERVED TIME			LOCATION			DURA- TION — MINUTES	MEAS. AREA Sq. Deg.			MEASUREMENTS			PROVINCIAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT. MER. DIST.	MEAN PLATE REGION	IM- POR- TANCE		TIME — UT	OBS. COND.	CORR. Sq. Deg.	MAX. WIDTH H _a	MAX. INT. %		
CAPRI S ONDREJOV MCMATH	16	1344 E	1351		N12 W67	5693	7 D	1	3	1347	1.20	3.40	2.20		
HAWAII	16	1527 E	1537		N21 E59	5706	10 D	1	3	1532	1.900	2.50			
LOCKHEED HAWAII	16	1848 E	1900 D	1924	N14 W36	5694	12 D	1	1	1900	3.50				
	16	1854 E	2310		N12 W17	5695	30 D	2	2	2314	3.20				
	16	2250	2342		N14 W16	5695	50	1	2	2314	1.50				
LOCKHEED	17	0010	0108 U	0035	N17 W37	5694	58 U	1	2	0035	2.30				
HAWAII	17	0024	0054 D	0028	N12 W39	5694	30 D	1	2	0028	1.60				
CAPRI S WENDEL	17	0935	1110 D		N17 E55	5706	95 D	2	3	1006	3.00	5.40			
STOCKHOLM	17	0936	1039 D		N18 E56	5706	63 D	2				8.00			
ARCTURI	17	0947 E	1129 D		N21 E50	5706	102 D	1+	2	1000	2.30	4.20			
WENDEL	17	1005 E	1024 D		N17 E56	5706	19 D	1	3	1009	1.70	2.80			
WENDEL	17	1520 E	1535 D		N18 W45	5694	15 D	1				4.00			
	17	1602	1636 D		N18 W46	5694	34 D	1				4.00			
LOCKHEED	18	0010	0145	0042	S12 W33	5695	95	1	2	0042	3.70				
HAWAII	18	0026 E	0040 D		S15 W31	5695	14 D	1	1	0040	1.10	3.10			
ONDREJOV	18	0537 E	0557		N20 W50	5694	20 D	1+	3	0543		2.00			
WENDEL	18	1402 E	1417 D		N22 W53	5694	15 D	1	3	1404		4.00			
LOCKHEED	19	0153	0230	0208	N19 W65	5694	37	1	1	0208	2.50				
CAPRI S	19	1001	1035		S12 W47	5695	34	1	3	1007	3.00	4.80			
CAPRI S	19	1039	1108		N24 E90	5713	29	1	3	1043	•40	•40			
WENDEL	19	1330 E	1354 D		S12 W51	5695	24 D	1+				5.00			
CAPRI S	19	1333 E	1353		S15 W50	5695	20 D	1	3	1335	2.00	3.40			
MCMATH	19	1334 E	1352		S11 W53	5695	18 D	1	1	1335	2.70				
HUANCAYO	19	1541	1614	1544	S11 W49	5695	33	2	2	1544	3.50	5.50			
CAPRI S	19	1545 E	1616		S12 W50	5695	31 D	1	3	1547	3.00	5.00			
LOCKHEED	19	2127	2205	2138	N15 E84	5713	38	1	3	2138	2.00				
LOCKHEED	20	0126	0205	0129	S13 W59	5695	39	2	2	0129	5.00				
CAPRI S	20	0642 E	0652 D		S13 W63	5695	10 D	1	1	0647	1.50	3.30			
WENDEL	22	0815	0845 D		N22 W45	5701	30 D	1				4.00			
WENDEL	23	1627 E	1643		N22 E30	5713	16 D	1				3.00			
WENDEL	24	0921 E	0939 D		N13 W40	5706	18 D	1				4.00	3.10		
ONDREJOV	24	0927 E	1004 D		N11 W38	5706	37 D	1	2	0928	2.00	2.60			
ONDREJOV	24	1307 E	1313 D		N20 E14	5713	6 D	1	3	1309	1.308	4.00			
WENDEL	24	1307 E	1316 D		N08 E64	5720	9 D	1	3	1308					
CAPRI S	25	0709	0728	0712	N20 E09	5713	19	2	2	0717	7.00	7.70			
ONDREJOV	25	0709 E	0743 D	0712	N18 E03	5713	34 D	2	3	0712	1.030	4.00			
CAPRI S	25	1026 E	1045		N18 E04	5713	19 D	1+	3	1030	4.00	4.00			
MOSCOW G	25	1027 E	1046		N19 E02	5713	18 D	2	3	1029		3.70			
ONDREJOV	25	1028 E	1046		N19 E09	5713	87 D	2+							

CDM/HMCE - STANDARDS - BOULDER

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE JUNE 1960	OBSERVED UNIVERSAL TIME				LOCATION	IM- POR- TANCE	DURA- TION MINUTES	TIME — UT	MEASUREMENTS			PROVISONAL IONOSPHERIC EFFECT				
		APPROX.		MC-MATH PIAGUE REGION						MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _A					
		LAT.	MER. DIST.	MAX. PHASE	MIN.					—	—	—					
CAPRI S	25	1136	1330	D	1221	N20	E06	5713	3	1217	12.00	12.60					
WENDEL	25	1136	E	1332	D	N22	E06	5713	116 D	3	1215	23.00					
MCMATH	25	1136	1520	1215	N20	E05	5713	234	3	1222	8.00	3.80					
ONDREJOV	25	1143	E	1458	D	N22	E05	5713	195 D	3							
CLIMAX	25	1232	E	1333	D	N26	E04	5713	61 D	2+							
SAC PEAK	25	1259	E	1518	U	N19	E07	5713	139 D	2+	1	7.48	27				
LOCKHEED	25	1659	1739	1706	N19	E00	5713	40	1	3	1706	3.40	30				
SAC PEAK	25	1700	1736	1706	N19	W01	5713	36	1+	2	1709	4.55	30				
MCMATH	25	1700	1740	1709	N19	W01	5713	40	1	2	1709	2.00	Slow S-SWF				
SAC PEAK	25	1948	2024	1955	N20	W03	5713	36	1	2	2.10		19				
LOCKHEED	25	2039	2128	2046	N19	W03	5713	49	2	3	2046	7.00					
SAC PEAK	25	2042	2130	2046	N18	W04	5713	48	3	2	13.29		30				
MCMATH	25	2042	2140	2047	N20	W04	5713	58	2+	2	2047	9.00	S-SWF				
HAWAII	25	2105	E	2123	D	N18	W04	5713	18 D	1	1	1.50					
HAWAII	25	2158	2202	2200	N07	W58	5706	4	1	2	2200	1.10					
HAWAII	26	0124	0134	0128	N38	E90	5724	10	1	3	0128	1.00					
WENDEL	26	0805	E	0830	D	N20	W07	5713	25 D	1		3.00					
{MCMATH	26	1110	1215	1215	N27	E75	5724	65	1+	2	1136						
CAPRI S	26	1115	E	1212	N27	E71	5724	57 D	2	1	1118	2.00					
WENDEL	26	1304	E	1314	D	N12	W66	5706	10 D	1		4.00					
{SAC PEAK	26	1326	1440	1404	N20	W14	5713	74	2+	3	1412	6.00	25				
CAPRI S	26	1349	1442	1442	N17	W11	5713	53	2			6.00					
WENDEL	26	1350	1443	1400	N20	W13	5713	53	2			14.00					
MCMATH	26	1350	1445	1404	N19	W14	5713	55	2+	2	1404	9.00	S-SWF				
LOCKHEED	26	1425	E	1525	U	N19	W13	5713	60 D	1	2	1425	3.40				
{SAC PEAK	26	2032	2124	2100	N19	W16	5713	70	1+	2	2100	4.50					
MCMATH	26	2044	2124	2056	N20	W15	5713	40	2	3	2102	8.48	20				
LOCKHEED	26	2049	E	2220	N19	W16	5713	91 D	1+	1	2102	3.50	G-SWF				
HAWAII	27	0200	0010	S10	E33	5719	122	3	2	0010	16.00		20				
{ONDREJOV	27	0002	0057	D	0023	S07	E35	5719	55 D	3	2	0023	7.60				
CAPRI S	27	0756	0810	D	0758	N09	E25	5720	14 D	1+	2	0758	5.80				
KRASNYA	27	0800	E	0821	S10	E24	5720	21 D	1	1	0801	2.50	2.70				
CAPRI S	27	0758	E	0811	S10	E30	5719	□	2								
CAPRI S	27	1119	E	1140	N20	W24	5713	21 D	1	1	1120	2.40					
CAPRI S	27	1140	E	1225	D	N13	W82	5706	45 D	2	1	1152	1.50				
{STOCKHOLM	27	1158	E	1238	D	N12	W75	5706	40 D	1+	2	1123	1.80				
LOCKHEED	27	1238	E	1314	D	N07	E90	5726	36 D	1+	2	1247	1.80				
SAC PEAK	27	1758	E	1828	N20	W27	5713	60	2	3	5.82		20				
LOCKHEED	27	1812	1856	1824	N19	W27	5713	44	1	2	1824	2.00					
MCMATH	27	1812	1815	1830	N19	W28	5713	63	1+	2	1830		20				
HUANCAYO	27	1841	E	1903	1841	N18	W27	5713	22 D	1	2	1844	1.50				
{LOCKHEED	27	1955	2022	2004	N28	E63	5724	30	1	2	2004	2.00					
SAC PEAK	27	1956	2044	D	2008	N28	E60	5724	26	1	3	2.78		18			
HAWAII	27	2140	E	2154	N17	W28	5713	64 D	3	2	2154	6.20					
{SAC PEAK	27	2140	2340	2158	N23	W23	5713	120	3	3	15.16		30				
LOCKHEED	27	2140	2345	2150	N21	W25	5713	125	2	2	2150	7.00					
MCMATH	27	2141	2251	D	2200	N22	W24	5713	70 D	2+	2	2200	9.00				
CLIMAX	27	2200	E	2222	D	N28	W38	5713	22 D	2+	2			30			
MT WILSON	27	2204	E	2304	D	N20	W28	5713	60 D	2+				30			

SOLAR FLARES

1960

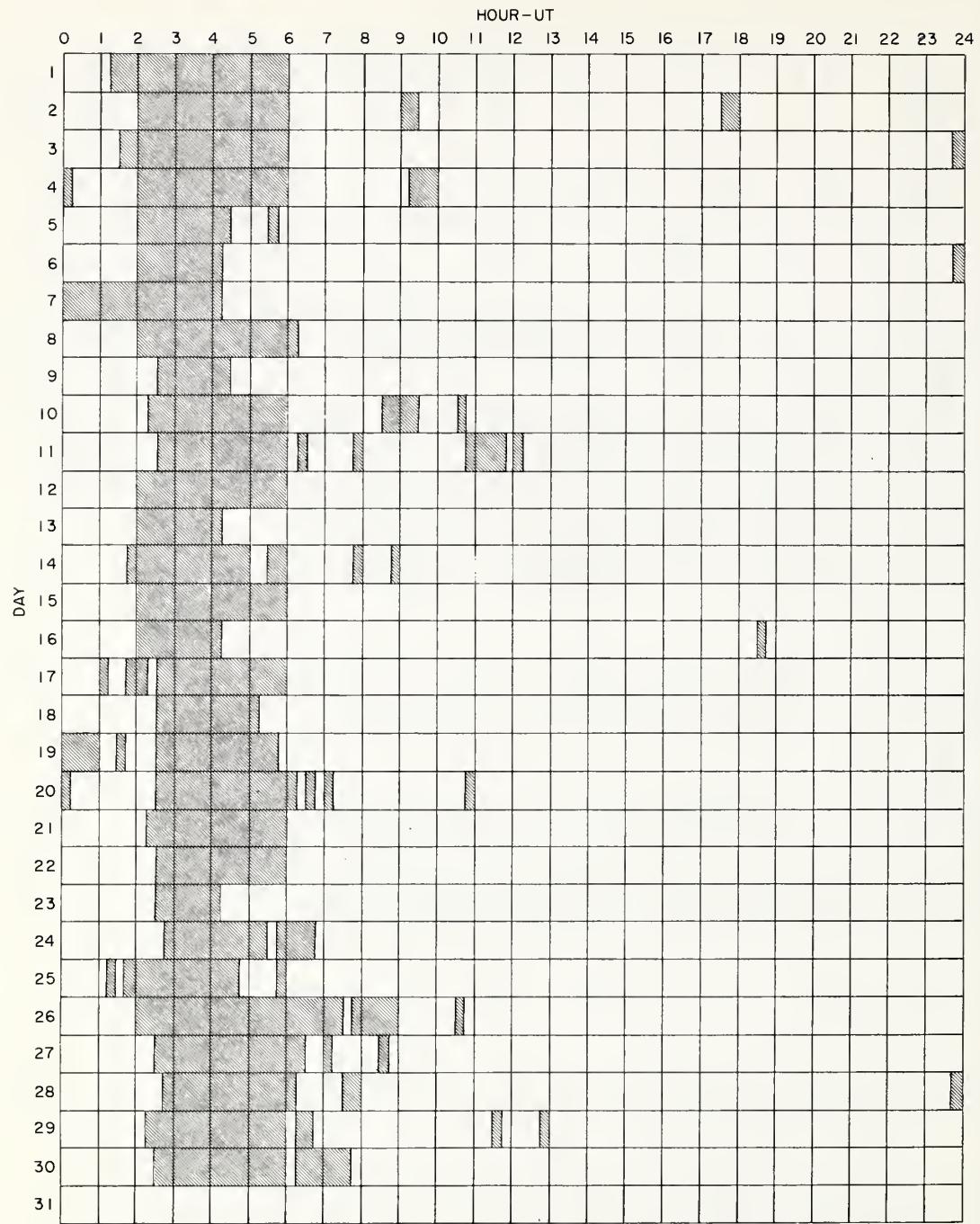
OBSERVATORY	DATE	OBSERVED TIME			LOCATION	DURA- TION MINUTES	IM- POR- TANCE	MEASUREMENTS				
		START	END	MAX. PHASE				APPROX.	MEAN PLATE REGION	MEAS. AREA Sq. Deg.	MAX. WIDTH Ra	
HAWAII	27 JUNE 1960	2244	D		N33	E52	5724	4 D	2	2244	1•60	
LOCKHEED	27	2241	2310	2250	N26	E54	5724	29	2	2250	2•90	
SAC PEAK	27	2244	2250	2246	N26	E53	5724	6	3	2270	2•70	
CAPRI S	28	1215	E	1228	N21	W36	5713	13 D	3	1217	1•70	
ONDREJOV	28	1215	1235	1216	N21	W37	5713	20	1+	1216	3•30	
STOCKHOLM	28	1216	E	1229	N19	W38	5713	13 D	1	1218	2•50	
LOCKHEED	28	1815	1942	1825	N10	E69	5726	87	1	1907	3•10	
LOCKHEED	28	1815	1942	1907	N10	E69	5726	87	1	1907	3•10	
HUANCAYO	28	1822	E	1838	N08	E68	5726	16	1	1825	1•50	
MCMATH	28	1849	E	1914	D	N07	E69	5726	25	D	1853	3•50
HUANCAYO	28	1900	E	1925	N08	E68	5726	25	D	1	4•00	
HAWAII	28	1922	E	1952	D	N19	E63	5726	25	D	1900	2•40
LOCKHEED	29	0100	0140	0106	N12	E02	5720	40	1	1923	5•80	
LOCKHEED	29	0125	0220	D	N23	W56	5713	55	1	1923	5•80	
CAPRI S	29	0719	E	0752	N28	E41	5724	33	D	0106	2•50	
CAPRI S	29	1045	F	1059	N28	E38	5724	14	D	0144	3•00	
SAC PEAK	29	1312	1322	1316	N08	E60	5726	10	1	0722	3•00	
HUANCAYO	29	1451	1520	1501	S15	E72	5729	29	1	1048	4•50	
HUANCAYO	29	1620	E	1642	N17	W48	5713	22	D	1501	2•40	
SAC PEAK	29	1810	E	1902	N26	E34	5724	52	1	1625	4•70	
MCMATH	29	1810	E	1920	N25	E32	5724	70	1	1824	3•64	
SAC PEAK	29	2150	2210	2156	N28	E26	5724	20	1	2000	2•00	
LOCKHEED	30	0220	0227	D	0225	U	5713	7 D	1	0225	3•32	
CAPRI S	30	1029	E	1158	D	N19	W54	5713	89	D	1046	2•50
CAPRI S	30	1114	E	1120	D	N10	E41	5724	6 D	1	1116	2•20
HAWAII	30	1920	E	2000	1922	N31	E27	5724	40 D	1	1922	3•20
HUANCAYO	30	2136	E	2151	2137	N19	W65	5713	15	1	2137	1•20
SAC PEAK	30	2222	2232	2228	N23	W70	5713	10	1	2•49	2•60	

ANACAPRI C	ANACAPRI I. - GERMAN
ANACAPRI S	ANACAPRI I. - SWEDISH
COOCD HOPE	ROYAL OBSERVATORY,
KIEV*	KIEV UNIVERSITY
KODAK IRKLAND	KODAIKANAL
KRASNAYA PAKHRA	KRASNAYA PAKHRA
LOCHINNAR	LOS ANGELES

MOSCOW - GAIKH
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SACRAMENTO PEAK
SCHAUMBURG
SCHAUMBURG
UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

LOCHEED OBSERVATIONS: ALL VALUES IN THE MAXIMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A SCALE OF 10 TO 40-NOT PERCENT OF THE CONTINUOUS SPECTRUM.

INTERVALS OF NO FLARE PATROL OBSERVATIONS
JUNE 1960

Stations Include:

COMMERCIAL - STANDARDS - BOULDER

Anacapri (Swedish)	Lockheed	Royal Greenwich Observatory
Arcetri	McMath	Herstmonceux
Hawaii	Ondrejov	Sacramento Peak
Huancayo		

SUBFLARES

Noted as follows: Date-Universal Time - Coordinates

MAY 1960

MCMATH	01	1203	N11 W58	LOCKHEED	07	1606	S12 E22	SAC PEAK	10	2220	N28 W50
MCMATH	01	1210	S09 E90	LOCKHEED	07	1647	S11 E12	SAC PEAK	10	2224	N12 W58
MCMATH	01	1314	N13 W46	LOCKHEED	07	1738	N12 W19	SAC PEAK	10	2228	N09 E02
CAPRI S	01	1315	E N13 W50	LOCKHEED	07	1750	N32 E11	SAC PEAK	10	2246	N29 W39
SAC PEAK	01	1414	S08 E90	MCMATH	07	1750	E N30 E10	LOCKHEED	10	2247	N28 W38
* LOCKHEED	01	1554	N14 W46	HAWAII	07	1800	E N11 W55	LOCKHEED	10	2332	N10 E04
* SAC PEAK	01	1556	S07 E45	LOCKHEED	07	1800	S11 E79				
LOCKHEED	01	1610	N12 W58	SAC PEAK	07	1802	S10 E87	LOCKHEED	11	0124	N11 W59
SAC PEAK	01	1610	N10 W59	SAC PEAK	07	1846	S13 E21	WENDEL	11	0548	E N30 W40
LOCKHEED	01	1631	S09 E69	LOCKHEED	07	1847	S11 E21	WENDEL	11	0619	E S12 E37
SAC PEAK	01	1634	S07 E67	SAC PEAK	07	1847	S10 W16	WENDEL	11	0715	E N19 W56
LOCKHEED	01	1725	N28 E90	LOCKHEED	07	1900	N11 W17	ONDREJOV	11	0740	E N11 W57
* HAWAII	01	1811	N08 W52	HAWAII	07	1924	E N08 W18	ONDREJOV	11	0745	E N31 W41
* SAC PEAK	01	1816	N11 W57	HAWAII	07	1946	N09 W21	WENDEL	11	0807	E S05 W57
LOCKHEED	01	1820	N11 W60	LOCKHEED	07	2017	N12 W21	ONDREJOV	11	0814	E N32 W42
HAWAII	01	1838	N08 W53	HAWAII	07	2022	E N10 W24	WENDEL	11	0828	E N31 W41
SAC PEAK	01	1844	N13 W49	LOCKHEED	07	2025	N28 E90	WENDEL	11	0851	E N31 W41
LOCKHEED	01	1928	N12 E62	SAC PEAK	07	2201	E 001 E07	WENDEL	11	0902	E N31 W42
LOCKHEED	01	1930	N11 E51	* SAC PEAK	07	2242	S13 E18	WENDEL	11	1040	E N31 W42
LOCKHEED	01	2030	N15 W51	* LOCKHEED	07	2248	S11 E18	ARCTRI	11	1014	E N30 W41
HAWAII	01	2050	N10 W52				WENDEL	11	1320	E S14 W41	
SAC PEAK	01	2050	U	LOCKHEED	08	0010	N30 E00	SAC PEAK	11	1320	S15 W31
LOCKHEED	01	2149	N20 W58	LOCKHEED	08	0034	N33 E01	* SAC PEAK	11	1334	N32 W40
LOCKHEED	01	2205	S08 E64	CAPRI S	08	0933	S14 E00	SAC PEAK	11	1428	S13 E24
HAWAII	01	2210	S07 E65	CAPRI S	08	0917	S10 E53	SAC PEAK	11	1436	S13 E28
SAC PEAK	01	2212	S10 E66	ARCTRI	08	0826	E S01 E53	SAC PEAK	11	1504	N12 W74
HAWAII	01	2242	N07 W52	* CAPRI S	08	1002	E N10 W24	SAC PEAK	11	1504	S16 W41
SAC PEAK	01	2242	N13 W49	WENDEL	08	1112	E S09 W23	SAC PEAK	11	1506	N09 W04
LOCKHEED	01	2243	N13 W50	SAC PEAK	08	1306	E N33 W05	LOCKHEED	11	1551	N17 W90
				WENDEL	08	1306	E N33 W05	LOCKHEED	11	1555	N26 W53
LOCKHEED	02	0135	N13 E58	LOCKHEED	08	1538	S09 W25	LOCKHEED	11	1603	N13 W71
MCMATH	02	1308	E S15 E90	LOCKHEED	08	1550	E N10 W31	SAC PEAK	11	1606	N28 W51
MCMATH	02	1328	S15 E88	LOCKHEED	08	1559	S11 W25	SAC PEAK	11	1627	N29 W50
* SAC PEAK	02	1426	S05 W31	LOCKHEED	08	1438	N33 W06	LOCKHEED	11	1648	S27 W38
MCMATH	02	1625	S06 E60	SAC PEAK	08	1452	S11 W20	LOCKHEED	11	1650	N16 W55
* HAWAII	02	1821	S16 W76	LOCKHEED	08	1555	S09 W20	SAC PEAK	11	1702	N30 W50
HAWAII	02	1934	N17 E48	LOCKHEED	08	1558	S09 W25	LOCKHEED	11	1703	N30 W47
* SAC PEAK	02	2134	N12 E30	LOCKHEED	08	1642	N19 E72	LOCKHEED	11	1704	N13 W71
SAC PEAK	02	2259	S14 E56	LOCKHEED	08	1642	N20 E70	LOCKHEED	11	1723	N29 W39
SAC PEAK	02	2300	S15 E83	LOCKHEED	08	1644	N33 W04	SAC PEAK	11	1726	U N28 W40
HAWAII	02	2300	S10 E57	LOCKHEED	08	1645	N32 W05	LOCKHEED	11	1735	N29 W08
HAWAII	02	2354	N33 E68	LOCKHEED	08	1730	N11 W29	LOCKHEED	11	1821	N31 W41
				SAC PEAK	08	1736	S12 W09	LOCKHEED	11	1821	N31 W41
WENDEL	03	0730	E S09 E50	LOCKHEED	08	1737	N33 W09	LOCKHEED	11	1911	S15 W46
SAC PEAK	03	1314	S03 W43	LOCKHEED	08	1801	N17 W47	HAWAII	11	1914	E S19 W47
SAC PEAK	03	1328	N14 E22	LOCKHEED	08	1820	N09 W10	LOCKHEED	11	1917	N10 W30
ONDREJOV	03	1421	E 041 E82	LOCKHEED	08	1830	N10 W03	* SAC PEAK	11	2110	E N12 W76
* SAC PEAK	03	1538	S05 W45	LOCKHEED	08	1833	N08 W32	LOCKHEED	11	2120	N09 W08
SAC PEAK	03	1544	S15 E70	LOCKHEED	08	1902	N13 W09	LOCKHEED	11	2242	N31 W49
SAC PEAK	03	1602	S15 E70	LOCKHEED	08	1902	N31 W09				
MCMATH	03	1607	S13 E46	LOCKHEED	08	1909	N11 W29	LOCKHEED	12	0152	S17 W16
SAC PEAK	03	1609	S14 E45	LOCKHEED	08	1914	N17 W33	LOCKHEED	12	0157	N13 W75
SAC PEAK	03	1612	S14 E45	LOCKHEED	08	1914	N17 W33	ONDREJOV	12	0465	E N13 W76
SAC PEAK	03	1614	S14 E45	LOCKHEED	08	1914	N17 W33	CAPRI S	12	0651	E N29 W50
SAC PEAK	03	1624	E S13 E45	LOCKHEED	08	2103	N11 W30	WENDEL	12	0831	E N33 W57
SAC PEAK	03	1710	N29 E58	LOCKHEED	08	2131	S10 W28	WENDEL	12	1021	E N32 W68
SAC PEAK	03	1818	E S15 E45	LOCKHEED	08	2132	S11 W29	SAC PEAK	12	1220	N10 W00
SAC PEAK	03	1830	S05 W46	LOCKHEED	08	2150	N30 W12	LOCKHEED	12	1242	N12 W90
HAWAII	03	1834	S07 S47	LOCKHEED	08	2348	N31 W06				
MCMATH	03	1845	N30 E56				LOCKHEED	12	1821	N31 W41	
SAC PEAK	03	2046	N30 E56	LOCKHEED	09	0024	N32 W06	LOCKHEED	12	1821	N31 W41
MCMATH	03	2138	S04 W49	LOCKHEED	09	0024	N32 W06	LOCKHEED	12	1911	S15 W46
				* HAWAII	09	0038	S11 E06	HAWAII	12	1802	N25 W65
WENDEL	05	0607	E N13 W01	LOCKHEED	09	0112	N32 E32	LOCKHEED	12	1857	N19 W90
WENDEL	05	0613	E N13 E01	LOCKHEED	09	0120	N12 W14	LOCKHEED	12	1902	N11 W00
WENDEL	05	0725	E N10 E16	LOCKHEED	09	0210	N12 W35	LOCKHEED	12	1905	N30 W62
MCMATH	05	1640	N11 E09	WENDEL	09	0520	E N32 W14	HAWAII	12	1926	E N22 W68
LOCKHEED	05	1717	S17 E17	WENDEL	09	0613	E S02 E52	SAC PEAK	12	1934	S11 W59
HAWAII	05	1750	S13 E18	WENDEL	09	1707	E S11 W37	LOCKHEED	12	1935	S16 W58
HAWAII	05	1752	N12 E02	LOCKHEED	09	1720	N30 W24	LOCKHEED	12	2026	S11 E09
LOCKHEED	05	1754	N12 E06	SAC PEAK	09	1802	S07 E44	LOCKHEED	12	2036	N29 W63
LOCKHEED	05	1803	N12 E06	SAC PEAK	09	1854	S07 E53	LOCKHEED	12	2229	S11 E90
LOCKHEED	05	1850	N12 E06	* SAC PEAK	09	1924	S18 W24	SAC PEAK	12	2230	S12 E90
LOCKHEED	05	1850	S17 E17	LOCKHEED	09	1928	S07 E53	SAC PEAK	12	2240	N27 W59
LOCKHEED	05	1916	N11 E05	LOCKHEED	09	1930	E S07 E51	LOCKHEED	12	2244	N28 W60
LOCKHEED	05	2002	N12 E05	SAC PEAK	09	2000	S11 W40	LOCKHEED	12	2246	N28 W60
MCMATH	05	2003	E N11 E04	LOCKHEED	09	2001	S12 E40	SAC PEAK	12	2248	N30 W64
LOCKHEED	05	2036	E 001 E04	LOCKHEED	09	2017	N12 W25	LOCKHEED	12	2320	N29 W63
LOCKHEED	05	2047	S03 W75	LOCKHEED	09	2040	N29 W25				
HAWAII	05	2050	S09 W75	LOCKHEED	09	2040	N29 W25	LOCKHEED	12	2320	N29 W63
HAWAII	05	2130	N12 E07	SAC PEAK	09	2054	N28 W25				
LOCKHEED	05	2204	S14 E13	SAC PEAK	09	2100	D S13 E47	* CAPRI S	13	0740	E S10 E90
LOCKHEED	05	2204	N12 E05	LOCKHEED	09	2114	S04 E32	WENDEL	13	0812	E S12 E44
LOCKHEED	05	2207	S18 W79	LOCKHEED	09	2120	N11 W26	ONDREJOV	13	0901	E N15 E20
LOCKHEED	05	2346	N11 E04	LOCKHEED	09	2152	N38 W03	CAPRI S	13	1037	N16 E22
LOCKHEED	05	2346	N11 E04	LOCKHEED	09	2152	N38 W03	CAPRI S	13	1250	N30 W73
LOCKHEED	05	2346	N11 E04	LOCKHEED	09	2152	N38 W03	CAPRI S	13	1324	E S11 E85
HAWAII	06	0050	E N10 W01	LOCKHEED	09	2240	N11 E17	SAC PEAK	13	1352	S11 E90
LOCKHEED	06	0159	N12 E03	LOCKHEED	09	2306	S16 W46	LOCKHEED	13	1509	S11 E82
LOCKHEED	06	0216	N12 E03	LOCKHEED	09	2312	N33 W26	LOCKHEED	13	1509	S11 E82
ONDREJOV	06	0540	E N12 E02	LOCKHEED	09	2326	N28 W26	LOCKHEED	13	1509	S11 E82
SAC PEAK	06	1338	S10 E90	LOCKHEED	09	2342	N11 E17	LOCKHEED	13	1509	S11 E82
LOCKHEED	06	1735	S13 E90	LOCKHEED	09	2346	S05 E51	LOCKHEED	13	1621	S12 W75
LOCKHEED	06	1921	S13 E34	LOCKHEED	09	2350	E N30 E51	LOCKHEED	13	1642	N29 W75
LOCKHEED	06	1948	S07 E04	LOCKHEED	10	0033	N31 W26	LOCKHEED	13	1643	S12 W90
LOCKHEED	06	2011	S08 W03	LOCKHEED	10	0040	S11 W26	LOCKHEED	13	1670	S11 W07
SAC PEAK	06	2018	S09 W03	SAC PEAK	10	1354	N33 W28	LOCKHEED	13	1670	N28 W74
SAC PEAK	06	2018	S09 W03	SAC PEAK	10	1354	N32 W28	LOCKHEED	13	1732	N30 W71
LOCKHEED	06	2027	N09 W05	WENDEL	10	1448	E N29 W46	SAC PEAK	13	1732	N30 W79
SAC PEAK	06	2028	N10 W04	WENDEL	10	1548	E N29 W46	LOCKHEED	13	1810	S12 E80
LOCKHEED	06	2115	S06 E02	WENDEL	10	1550	N31 W35	LOCKHEED	13	1810	N29 W79
LOCKHEED	06	2138	N15 W22	LOCKHEED	10	1550	N31 W35	LOCKHEED	13	1810	N29 W79
HAWAII	06	2142	N11 W22	LOCKHEED	10	1624	E N29 W35	SAC PEAK	13	1810	N29 W79
SAC PEAK	06	2142	N13 W21	SAC PEAK	10	1632	N30 W39	LOCKHEED	13	1810	N29 W79
LOCKHEED	07	0010	N28 E19	ONDREJOV	10	1640	E S10 E35	LOCKHEED	13	1824	N15 E16
LOCKHEED	07	0020	N09 W08	LOCKHEED	10	1839	N12 E26	LOCKHEED	13	1849	N29 W79
LOCKHEED	07	0100	S07 E01	LOCKHEED	10	1840	N12 E41	SAC PEAK	13	1852	N28 W80
CAPRI S	07	0747	N12 W08	LOCKHEED	10	1942	N32 W36	LOCKHEED	13	1948	N28 W79
WENDEL	07	0808	E N12 W13	MCMATH	10	1936	E N29 W48	LOCKHEED	13	1949	N29 W79
WENDEL	07	0854	E N12 W13	LOCKHEED	10	1939	N12 W63	LOCKHEED	13	2019	N29 W79
ONDREJOV	07	1231	N30 E07	LOCKHEED	10	2004	N11 W57	LOCKHEED	13	2101	N29 W79
SAC PEAK	07	1326	S10 E12	LOCKHEED	10	2027	N13 E13	LOCKHEED	13	2133	N29 W79
LOCKHEED	07	1558	N30 E08	LOCKHEED	10	2039	N07 E05	SAC PEAK	13	2138	N28 W80
SAC PEAK	07	1592	S08 E77	LOCKHEED	10	2141	N29 E38	SAC PEAK			

SUBFLARES

Noted as follows: Date - Universal Time - Coordinates

MAY 1960

LOCKHEED	13	2209	N29 W90	LOCKHEEO	18	1852	N15 W27	LOCKHEED	23	2152	N13 E12
SAC PEAK	13	2210	N29 W86	HAWAII	18	1852	N13 W27	HAWAII	23	2326	E N12 E19
HAWAII	13	2211	N29 W85	LOCKHEEO	18	1852	N13 W27	LOCKHEED	23	2340	N12 E18
LOCKHEEO	13	2212	S10 W24	HOMATH	18	2155	S12 W42				
LOCKHEEO	13	2310	N29 W90	LOCKHEEO	18	2226	S12 E05	LOCKHEEO	24	0004	N13 E17
HAWAII	13	2312	N16 W85	LOCKHEEO	18	2255	N17 W25	LOCKHEED	24	0051	N17 E14
LOCKHEEO	13	2325	E N30 W06	SAC PEAK	18	2259	N17 W25	LOCKHEED	24	0114	N12 E16
LOCKHEED	13	2332	N29 W79	HAWAII	18	2354	E N13 W30	LOCKHEED	24	0149	N12 E16
LOCKHEED	13	2333	S12	SAC PEAK	19	1450	S12 W02	* CAPRI 5	24	0460	E N17 E12
LOCKHEEO	13	2359	N29 W79	LOCKHEED	19	1500	S13 E14	WENDEL	24	0742	E N02 E49
LOCKHEEO	14	0027	N29 W90	LOCKHEED	19	1500	S13 E14	ONDREJOV	24	0928	E N11 E13
LOCKHEEO	14	0109	N29 W90	MCMATH	19	1545	S14 E14	ONDREJOV	24	0937	E N16 E09
LOCKHEEO	14	0135	N29 W90	SAC PEAK	19	1612	D W12 S03	* MCATH	24	1028	E N12 W52
SAC PEAK	14	0136	N29 W90	LOCKHEEO	19	1613	S12 W05	MCATH	24	1141	E N12 E10
SAC PEAK	14	1320	N18 E90	HUANCAYO	19	1613	E N14 E02	MCATH	24	1157	E N12 E10
SAC PEAK	14	1432	N16 E90	LOCKHEEO	19	1613	S12 W02	MCATH	24	1217	N03 E47
LOCKHEED	14	1736	S11 E66	LOCKHEEO	19	1740	S13 E14	SAC PEAK	24	1332	N12 E09
MCMATH	14	1737	S10 W34	HAWAII	19	1750	E S08 E03	SAC PEAK	24	1354	N10 E11
LOCKHEEO	14	1820	U S09 E64	LOCKHEEO	19	1757	N14 E78	SAC PEAK	24	1422	N10 E11
MCMATH	14	1841	S10 E53	LOCKHEEO	19	1807	N16 E76	LOCKHEEO	24	1414	E N10 E10
SAC PEAK	14	1904	S10 E53	LOCKHEEO	19	1807	N16 E76	LOCKHEEO	24	1502	N14 E07
HAWAII	14	1912	S10 E64	LOCKHEEO	19	1912	S13 W05	LOCKHEEO	24	1643	N15 E05
	14	2356	N16 E27	LOCKHEEO	19	1912	S13 W05	MCMATH	24	1801	N14 E06
WENDEL	15	0631	E N15 E28	SAC PEAK	19	1914	S12 W06	SAC PEAK	24	1822	E N10 E06
WENDEL	15	0756	N27 E76	LOCKHEEO	19	1920	S12 W06	LOCKHEEO	24	1830	E N16 E06
WENDEL	15	0800	S11 E56	LOCKHEEO	19	1948	S16 W76	LOCKHEEO	24	1934	U S09 W73
WENDEL	15	1241	N18 E70	LOCKHEEO	19	1955	S13 E12	LOCKHEED	24	1941	N02 E40
MCMATH	15	1242	N17 E20	LOCKHEEO	19	1956	S14 W06	SAC PEAK	24	1952	N11 E20
CAPRI S	15	1248	E N16 E20	SAC PEAK	19	2002	S12 W06	MCMATH	24	2022	E N16 E06
MCMATH	15	1302	N16 E17	LOCKHEEO	19	2006	S14 W15	LOCKHEEO	24	2026	S09 W75
WENDEL	15	1337	E N16 E4	HUANCAYO	19	2007	S15 W07	LOCKHEEO	24	2043	E N17 E07
MCMATH	15	1804	S12 E49	LOCKHEEO	19	2052	S14 E13	LOCKHEED	24	2101	N11 E08
SAC PEAK	15	1804	S12 E49	LOCKHEEO	19	2247	S13 W07	LOCKHEED	24	2152	N14 E08
SAC PEAK	15	1944	S12 E48	HAWAII	19	2246	E S13 W07	LOCKHEED	24	2201	N14 E08
MCMATH	15	2100	S17 E16	SAC PEAK	19	2250	S13 W07	LOCKHEED	24	2206	N09 S05
SAC PEAK	15	2102	S12 E2	LOCKHEEO	20	0124	S12 W00	HAWAII	24	2314	N16 E02
SAC PEAK	15	2110	N16 E15	SAC PEAK	20	1514	S10 S13				
SAC PEAK	15	2132	N15 E16	LOCKHEEO	20	1450	S08 S13	LOCKHEED	25	0001	N11 E05
HAWAII	15	2134	N20 E14	LOCKHEEO	20	1821	S08 W13	LOCKHEED	25	0039	N12 E07
SAC PEAK	15	2308	S11 E47	MCMATH	20	1822	S09 W14	LOCKHEED	25	0053	N12 E07
WENDEL	16	0927	E S09 E44	LOCKHEEO	20	1900	S14 W03	LOCKHEED	25	0132	S10 W75
MCMATH	16	1210	N16 E09	LOCKHEEO	20	1950	S15 W04	CAPRI S	25	1144	N16 W01
MCMATH	16	1246	S13 E38	LOCKHEED	20	1950	S15 W09	MCMATH	25	1150	E N15 W01
MCMATH	16	1306	N16 E06	LOCKHEEO	20	1950	S15 W04	* CAPRI S	25	1247	N15 W01
SAC PEAK	16	1308	S09 E40	LOCKHEED	20	1950	S15 W04	MCMATH	25	1248	E N18 W08
MCMATH	16	1308	S10 E40	LOCKHEEO	20	1950	S15 W04	WENDEL	25	1250	E N15 W04
SAC PEAK	16	1308	S10 E40	HAWAII	20	1958	E S14 W01	MCMATH	25	1334	E N15 W04
SAC PEAK	16	1308	N15 E45	SAC PEAK	20	1958	E S14 W01	SAC PEAK	25	1346	N19 W06
ONDREJOV	16	1312	E S10 E42	SAC PEAK	20	2042	S15 W03	HUANCAYO	25	1418	E N15 W05
MCMATH	16	1339	S13 E38	LOCKHEEO	20	2101	S15 W04	* MCMATH	25	1430	N18 W39
SAC PEAK	16	1452	N24 E34	LOCKHEED	20	2101	S15 W04	ONDREJOV	25	1431	E N20 W38
MCMATH	16	1452	S12 E40	HAWAII	20	2102	E S15 W02	* CAPRI S	25	1441	E N18 W40
WENDEL	16	1494	S14 E38	LOCKHEEO	20	2122	N13 E51	HUANCAYO	25	1440	E N01 W36
HUANCAYO	16	1501	S09 E40	LOCKHEEO	20	2330	S09 W18	* SAC PEAK	25	1442	N18 W39
WENDEL	16	1505	E S09 E42	LOCKHEED	20	2330	S09 W18	MCMATH	25	1530	N14 W05
WENDEL	16	1513	E N16 E09	HAWAII	21	0126	S14 W08	* WENDEL	25	1534	E N19 W09
WENDEL	16	1521	E S08 E45	LOCKHEEO	21	0126	S13 W09	WENDEL	25	1538	E N17 W04
MCMATH	16	1622	N16 E08	SAC PEAK	21	0126	S13 W09	HUANCAYO	25	1541	E N15 W04
SAC PEAK	16	1623	N16 E01	LOCKHEEO	21	1658	N16 S48	SAC PEAK	25	1554	S13 M72
LOCKHEEO	16	1833	U N16 W06	SAC PEAK	21	1746	N10 E39	MCMATH	25	1555	S12 W72
MCMATH	16	1901	N15 E01	LOCKHEEO	21	1747	N09 E39	WENDEL	25	1603	N12 W04
LOCKHEED	16	2031	S11 E36	LOCKHEEO	21	1747	N11 E38	LOCKHEED	25	1725	N13 E30
LOCKHEEO	16	2131	N19 E03	LOCKHEEO	21	1818	S16 W15	* LOCKHEED	25	1729	N16 W08
HUANCAYO	16	2143	S10 E36	LOCKHEEO	21	1818	S16 W15	LOCKHEED	25	1729	N17 K08
HUANCAYO	16	2151	S10 E37	SAC PEAK	21	1818	S16 W15	* MCMATH	25	1750	E N15 W05
LOCKHEEO	16	2236	S10 E35	LOCKHEEO	21	1818	S16 W15	HUANCAYO	25	1918	E N12 W18
SAC PEAK	16	2236	S10 E37	LOCKHEEO	21	1838	N03 E90	LOCKHEEO	25	2108	E N12 W17
SAC PEAK	16	2252	S10 E37	LOCKHEEO	21	1845	N16 W75	LOCKHEEO	25	2152	N14 W09
LOCKHEEO	16	2258	S10 E35	SAC PEAK	21	2000	N17 W75	MCMATH	25	2220	N19 W44
LOCKHEEO	16	2309	S17 E51	LOCKHEEO	21	2021	N17 W78	LOCKHEEO	25	2220	N18 W44
SAC PEAK	16	2326	N13 W03	MCMATH	21	2021	N17 W78	MCMATH	25	2220	N18 W44
LOCKHEEO	16	2343	N16 E03	LOCKHEEO	21	2022	N17 W75	HAWAII	25	2222	N14 W45
LOCKHEEO	17	0030	S10 E34	LOCKHEEO	21	2106	S14 W16	LOCKHEED	26	0035	E N09 E09
LOCKHEED	17	0051	E S10 E34	SAC PEAK	21	2310	N09 E37	LOCKHEED	26	0055	E N12 E12
ARCTRI	17	0052	E N17 W16	LOCKHEEO	21	2310	N11 E37	LOCKHEED	26	0122	N14 W11
ONDREJOV	17	0803	N15 W10	LOCKHEEO	22	0020	N17 E45	ONDREJOV	26	0453	N13 W45
WENDEL	17	0808	E S15 W10	LOCKHEEO	22	1420	E N20 W90	ONDREJOV	26	0541	E N13 W11
SAC PEAK	17	1332	N18 W06	LOCKHEEO	22	1455	N15 E36	WENDEL	26	0707	E N12 E08
WENDEL	17	1334	S11 E33	LOCKHEEO	22	1520	N03 E70	WENDEL	26	1140	E N15 W18
SAC PEAK	17	1344	S13 E40	SAC PEAK	22	1530	N02 E07	SAC PEAK	26	1332	S09 W90
SAC PEAK	17	1400	S09 E26	LOCKHEEO	22	1619	N03 E70	SAC PEAK	26	1340	N11 W12
SAC PEAK	17	1414	N18 W05	SAC PEAK	22	1622	N02 E70	LOCKHEEO	26	1500	U S10 W90
HUANCAYO	17	1415	S11 E39	LOCKHEEO	22	1624	S11 W40	SAC PEAK	26	1506	E N14 W14
WENDEL	17	1416	E S10 E32	LOCKHEEO	22	1706	S08 W39	SAC PEAK	26	1514	E N15 E30
WENDEL	17	1431	E S10 E30	LOCKHEEO	22	1717	S07 N07	LOCKHEEO	26	1515	S13 E50
SAC PEAK	17	1502	N15 W18	LOCKHEEO	22	1719	S07 N07	SAC PEAK	26	1522	S13 E50
WENDEL	17	1504	E S14 W18	LOCKHEEO	22	1712	N19 W90	SAC PEAK	26	1522	S13 W90
SAC PEAK	17	1614	S15 E39	SAC PEAK	22	1742	N02 E71	LOCKHEEO	26	1615	N16 W65
LOCKHEEO	17	1615	S14 E37	LOCKHEEO	22	1808	N03 E70	LOCKHEEO	26	1626	N19 W55
LOCKHEEO	17	1720	S14 E37	LOCKHEEO	22	1808	N03 E70	HUANCAYO	26	1637	E N12 W17
SAC PEAK	17	1722	S14 E36	LOCKHEEO	22	1843	S13 S33	LOCKHEED	26	1643	N18 H21
SAC PEAK	17	1802	N15 W13	LOCKHEEO	22	1902	N03 E70	LOCKHEED	26	1702	N18 W65
LOCKHEEO	17	1808	N18 W13	LOCKHEEO	22	1917	S12 W30	SAC PEAK	26	1708	N15 W55
HAWAII	17	1808	N16 W15	LOCKHEEO	22	1948	N13 W34	SAC PEAK	26	1740	N11 W16
SAC PEAK	17	1810	S14 E21	LOCKHEEO	22	1913	N15 E33	LOCKHEEO	26	1742	N12 W16
LOCKHEEO	17	1818	N15 W21	LOCKHEEO	22	1949	N13 E33	LOCKHEEO	26	1800	N19 W57
LOCKHEEO	17	1856	S13 E38	LOCKHEEO	22	1930	N13 E33	LOCKHEEO	26	1800	N19 W57
LOCKHEEO	17	1856	S13 E38	SAC PEAK	22	1938	N13 E44	LOCKHEEO	26	1804	N16 W20
LOCKHEEO	17	1944	N16 W22	LOCKHEEO	22	2100	N04 E70	HAWAII	26	1806	N12 W19
HAWAII	17	1946	N15 W22	SAC PEAK	22	2148	N04 E70	LOCKHEEO	26	1807	E N12 W18
LOCKHEEO	17	1946	S17 E34	LOCKHEEO	22	2148	N04 E70	* SAC PEAK	26	1822	E N12 W18
LOCKHEEO	17	1956	S08 E25	LOCKHEEO	22	2148	N04 E70	* SAC PEAK	26	1832	E N12 W16
SAC PEAK	17	2002	S07 E26	LOCKHEEO	22	2150	N02 E68	* HAWAII	26	1834	E N10 W10
LOCKHEEO	17	2004	N17 W13	LOCKHEEO	22	2345	N19 W06	LOCKHEEO	26	1924	N20 W23
LOCKHEEO	17	2004	N17 W13	LOCKHEEO	23	0000	N03 E67	LOCKHEEO	26	1926	N22 W22
LOCKHEEO	17	2027	S07 E25	LOCKHEEO	23	0115	N20 W90	LOCKHEEO	26	1930	N21 W24
HAWAII	17	2030	N15 W16	LOCKHEEO	23	0115	N03 E67	LOCKHEEO	26	1950	N21 W24
SAC PEAK	17	2030	N16 W13	LOCKHEEO	23	1527	E S12 W56	LOCKHEEO	26	1955	N15 W57
LOCKHEEO	17	2055	N17 W13	LOCKHEEO	23	1536	N11 E24	* LOCKHEEO	26	2015	N13 E80
LOCKHEEO	17	2112	N16 W06	LOCKHEEO	23	1550	N03 E56	* SAC PEAK	26	2020	N13 E90
LOCKHEEO	17	2112	N16 W14	LOCKHEEO	23	1630	N13 E21	LOCKHEEO	26	2025	N13 E80
LOCKHEEO	17	2129	N17 W14	LOCKHEEO	23	1700	N13 E33	SAC PEAK	26	2202	N11 E73
LOCKHEEO	17	2129	N17 W14	LOCKHEEO	23	1700	N13 E21	LOCKHEEO	26	2227	N16 W23
LOCKHEEO	17	2220	N16 W06	* MCMATH	23	1728	N1				

Noted as follows: Date-Universal Time - Coordinates

MAY 1960

LOCKHEED	27	1534	N05 E03
LOCKHEED	27	1610	N05 E05
LOCKHEED	27	1610	N15 E30
LOCKHEED	27	1630	N15 W34
LOCKHEED	27	1630	N15 W34
LOCKHEED	27	1640	N14 E70
DNDRJDV	27	1646	N10 E60
DNDRJDV	27	1706	N16 E39
LOCKHEED	27	1710	N15 W37
* SAC PEAK	27	1720	N19 W71
* LOCKHEED	27	1725	N18 W70
LOCKHEED	27	1737	N19 W37
LOCKHEED	27	1751	N13 W34
LOCKHEED	27	1803	N18 W70
LOCKHEED	27	1810	N15 E37
* LOCKHEED	27	1820	N16 W30
* SAC PEAK	27	1850	N15 W30
LOCKHEED	27	1917	N15 E70
HAWAII	27	1922	N19 E66
LOCKHEED	27	1929	N16 W35
LOCKHEED	27	1935	N15 W37
MCMATH	27	2011	N12 E67
LOCKHEED	27	2012	N17 E74
LOCKHEED	27	2012	N17 E74
HAWAII	27	2044	N19 E65
HUANCAYD	27	2045	N13 E70
LOCKHEED	27	2050	N16 W31
HAWAII	27	2050	N04 W01
LOCKHEED	27	2100	N09 W20
HAWAII	27	2100	N08 W22
LOCKHEED	27	2137	N04 W02
* LOCKHEED	27	2153	N15 E62
* HAWAII	27	2155	N04 W66
LOCKHEED	27	2211	N16 W31
LOCKHEED	27	2355	N15 E64
LOCKHEED	28	0030	N15 E64
HAWAII	28	0030	N15 E64
* LOCKHEED	28	0131	N15 E43
LOCKHEED	28	0130	N17 W43
LOCKHEED	28	0217	N31 E90
CAPRI S	28	0228 E	N12 E58
WENDEL	28	0322 E	N13 E60
CAPRI S	28	1300	N12 E50
* WENDEL	28	1324 E	N15 E56
* HUANCAYD	28	1508 E	N13 E55
LOCKHEED	28	1529	N14 E56
MCMATH	28	1532	N12 E56
LOCKHEED	28	1552	N14 E56
LOCKHEED	28	1600	N14 E56
LOCKHEED	28	1715	N14 E56
LOCKHEED	28	1745	N05 W12
LOCKHEED	28	1807	N25 E87
LOCKHEED	28	1818	N16 W46
LOCKHEED	28	1854	N15 W48
LOCKHEED	28	2005	S09 E60
SAC PEAK	28	1906	S09 E61
HAWAII	28	1907	S03 E64
LOCKHEED	28	1917	N16 E53
HAWAII	28	1922 E	N18 E51
LOCKHEED	28	1930	N16 E53
LOCKHEED	28	2023	N16 E53
LOCKHEED	28	2115	S07 E61
MCMATH	28	2115	S09 E60
HAWAII	28	2115	S05 E63
* LOCKHEED	28	2130	N05 W14
* LOCKHEED	28	2130	N05 W14
* MCMATH	28	2150	N04 W14
* HAWAII	28	2152	N02 W14
LOCKHEED	28	2329	N15 W47
LOCKHEED	29	0010	N16 E51
LOCKHEED	29	0058	S12 E61
LOCKHEED	29	0102	S16 E37
HAWAII	29	0114 E	S13 E39
HAWAII	29	0122	N19 E47
LOCKHEED	29	0123	N14 E48
* SAC PEAK	29	1542	N12 E43
* SAC PEAK	29	1542	N12 E43
* MCMATH	29	1554 E	N12 E44
HUANCAYD	29	1704	N12 E41
SAC PEAK	29	1714	N11 E39
HAWAII	29	1810	N16 E39
* LOCKHEED	29	2000 E	N14 E39
LOCKHEED	29	2020	N16 E63
LOCKHEED	29	2140 U	N13 E41
HAWAII	29	2144	N17 E39
HAWAII	29	2222 E	N18 E36
SAC PEAK	29	2242	S18 E26
HAWAII	29	2244	S15 E26
WENDEL	30	1548 E	N15 E24
WENDEL	30	1705 E	N16 E24
* SAC PEAK	30	1809 D	N13 E27
HAWAII	30	1908	N36 E65
LOCKHEED	30	2039	N16 E65
HAWAII	30	2042	N08 W70
LOCKHEED	30	2042	N31 E65
HAWAII	30	2044	N36 E65
LOCKHEED	30	2132	N26 E60
SAC PEAK	30	2200	N27 E64
* LOCKHEED	30	2205	N31 E65
LOCKHEED	30	2241	N16 W75
LOCKHEED	30	2312	N10 W74
* CAPRI S	31	0750 E	N12 E21
* MCMATH	31	1321 E	N17 W90
* MCMATH	31	1321 E	N17 W90
WENDEL	31	1635 E	N28 E46
HAWAII	31	1946	N14 E11
LOCKHEED	31	2005	N16 W90
MCMATH	31	2010	N18 W90
LOCKHEED	31	2034	N31 E90
LOCKHEED	31	2038	N16 E13
LOCKHEED	31	2200	S17 W02
SAC PEAK	31	2200	S17 W02
LOCKHEED	31	2212	N32 E50
HAWAII	31	2212	S16 W02
LOCKHEED	31	2242	N31 W02
LOCKHEED	31	2324	N13 W09
LOCKHEED	31	2322	S15 W04
SAC PEAK	31	2324	S17 W02

*Rated as flare of importance ≥ 1 by other observatories (see CRPL-F-190 Part B) page LIII.

SOLAR FLARES

NOV.-DEC. 1959

OBSERVATORY	DATE NOV 1959	OBSERVED UNIVERSAL TIME				APPROX. LAT.	LOCATION	IM- POR- TANCE	DURA- TION MINUTES	ONS. COND.	TIME UT	MEASUREMENTS			PROVISONAL IONOSPHERIC EFFECT
		START	END	MAX.	PHASE			MER. DIST.	MEG. PLAGE REGION			CORR. AREA Sq. Deg.	MAX. WIDTH Hs	MAX. INT. %	
KYOTO	14	0146	0153	0203	D	S08	W23	54.54	7	1	014.8	3.32	80		
KYOTO	14	0154	E	0205	D	S20	W46	54.52	9	D	0154	5.82	1.32	S-SWF	
KYOTO	14	0205	0223	D	0212	S18	W34	54.52	18	D	0212	2.49	120	S-SWF	
KYOTO	14	0453	0521	D	S17	W37	54.52	28	D	0453	3.32	1.66	100		
KYOTO	15	0620	E	0636	D	S16	W35	54.54	16	D	0620	2.08	1.83	100	
KYOTO	15	0641	E	0704	D	S19	W50	54.52	23	D	0641	4.78	2.00	120	
KYOTO	29	0056	E	0108	D	N10	E29	54.76	12	D	0101	2.91	1.58	100	
KYOTO	29	0201	0212	D	N20	E05	54.71	11	D	0201	2.08	1.73	100		
KYOTO	29	0536	E	0545	N09	E29	54.76	9	D	0536	3.74	1.66	120		
KYOTO	29	0613	0622		N20	E05	54.71	9		0613	2.28	1.49	100		
KYOTO	30	0000	E	0008	N08	E21	54.76	8	D	0145	1.74	100			
KYOTO	30	0128	0134	0130	N08	E16	54.76	6		0130	1.66	2.17	120		
KYOTO	30	0504	0525	N08	E16	54.76	21		0504	3.32	1.66	100			
KYOTO	30	2342	0204		N06	E05	54.76	142		2350	3.32	2.00	100		
DEC 1959															
KYOTO	01	0040	E	0114	D	N07	E02	54.76	34	D	0040	2.91	100		
KYOTO	02	0141	0147	D	N11	E49	54.78	6	D	0141	1.66	1.83	120		
KYOTO	02	0432	0440	D	N07	W12	54.76	8	D	0432	1.45	3.37	120		
KYOTO	02	0500	E	0656	N08	W10	54.76	116	D	0528	8.72	1.83	130		
KYOTO	10	2355	0032	D	N18	W90	54.78	37	D	2355	7.27	4.07	130		
KYOTO	12	0058	E	0126	N18	E42	54.91	28	D	0058	2.49	1.66	100		
KYOTO	25	0225	0235	D	N24	W22	55.02	10	D	0225	1.66	90			

E - LESS THAN
D - GREATER THAN
U - APPROXIMATE
& - PLUS
- - MINUS
□ - NOT REPORTED

COMMERCE - STANDARDS - BOULDER

FOOTNOTES FOR KYOTO FLARES
NOV-DEC. 1959

Note: The dates and hours of flare patrol at Kyoto were as follows:

1959 Nov. 4	0540-0645; 0655-0700
5	0500-0554; 0630-0655
6	0012-0107
7	0525-0558
7-8	2337-2346; 2351-0002; 0126-0131; 0140-0225
10	0555-0640
10-11	2345-0055; 0110-0121; 0520-0530
11-12	2345-0028; 0125-0210
14	0115-0335; 0407-0635
15	0603-0710
19-20	2340-0210; 0340-0615
21-22	2330-0010; 0205-0240; 0440-0520
23	0000-0225; 0345-0606; 0645-0730
24	0023-0215; 0420-0447
28-29	2340-0010; 0055-0154; 0201-0214; 0430-0625
30	0000-0050; 0120-0220; 0430-0630
30	2340-0215
1959 Dec. 1	0415-0635
2	0012-0240; 0420-0607; 0617-0638; 0643-0700
7	0115-0223
8-9	2350-0230
10-11	2355-0045
12	0010-0230; 0432-0534
12-13	2347-0240; 0410-0450
21-22	2345-0110; 0140-0156
25	0210-0240; 0420-0515
26	0200-0220; 0340-0509
27	0005-0200; 0410-0530; 0545-0645
28	0215-0235; 0427-0432
29	0112-0120; 0129-0137; 0415-0447
30	0058-0125; 0205-0225; 0400-0500

With this information the charts giving intervals of no flare patrol observations in CRPL-F 189 Part B and CRPL-F 190 Part B can be revised.

SOLAR FLARES
JANUARY 1960

OBSERVATORY	DATE JAN 1960	OBSERVED UNIVERSAL TIME				APPROX. LAT. MER. DIST.	ME-MATH PLAGE REGION	DURA- TION MINUTES	IM- POR- TANCE	MEASUREMENTS				PROVISONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	TIME — UT					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
VOROSHILOV	01	0353	0405 D	0354	S15 W78	5508	12 D	1+	2	•73	2.17	4.47	86	
PIRCULI	03	1003	1015	1008 U	S10 W50	5510	12	1	2	0830	•88	4.14	60	
ABASTUMANI	04	0828	0838	0830	S20 E82	5525	10	1	2	0849	1.00	1.54	62	68
ABASTUMANI	04	0846	0856	0849	S19 E79	5525	10	1	2	0830	•88	4.14	101	101
VOROSHILOV	07	0107	0120	0109	N07 W67	5512	13	1+	2	0849	1.00	1.00	87	87
VOROSHILOV	07	0131	0146	0133	N07 W68	5512	15	1+	2	0849	1.00	1.00	76	76
VOROSHILOV	07	2358	0012	0007	N07 W80	5512	14	1	2	0849	1.00	1.00	68	68
VOROSHILOV	07	2359	0005	0002	S13 W85	5510	6	1	2	0849	1.00	1.00	102	102
VOROSHILOV	08	0033	0038	0034	N06 W82	5512	5	1+	2	0830	•63	2.48	53	53
PIRCULI	09	0636 E	0645	0639	S18 E17	5525	9 D	1	2	0814	•90	2.30	89	89
PIRCULI	09	0813	0818	0815	S14 E07	5525	5	1	2	0819	1.63	1.90	65	65
VOROSHILOV	14	0303	0353	0304	N18 W28	5527	50	1+	2	0814	•90	2.30	70	70
SIMEIZ	14	0811 E	0830 D	0814 U	S14 W68	5525	19 D	1	2	0819	1.63	1.90	83	83
SIMEIZ	14	0819 E	0837 D	0819 U	N19 W31	5527	18 D	1	2	0819	1.63	1.90	64	64
VOROSHILOV	17	0027 E	0042 D	0029	N09 E64	5540	15 D	1+	1	0.90	2.25	2.17	62	62
PIRCULI	18	0804	0816 D	0813 U	N08 E38	5540	12 D	1	2	0814	•90	2.30	65	65
PIRCULI	18	0935 E	0950	0940	N08 E37	5540	15 D	1	2	0819	1.63	1.90	70	70
VOROSHILOV	18	2347 E	0149		N14 E54	5541	122 D	1	2	0013	2.71	2.71		
PIRCULI	19	0818	0838	0826	N16 E48	5545	20	1	2	0811	2.81	2.81		
PIRCULI	23	0646 E	0955 D	0837 U	N08 W59	5538	189 D	1+	1	0651	1.01	1.01	80	80
SIMEIZ	23	0651 E	0705 D		N09 E88	5550	14 D	1+	1	0651	1.01	1.01		
KYOTO	26	0139 E	0152 D		N07 E47	5550	13 D	1	2	0139	2.08	2.08		
PIRCULI	27	0037	0043	0038	N13 E48	5550	6	1	3	1.71	3.00	3.00	68	68
SIMEIZ	27	0721 E	0810 D	0723 U	N10 E77	5552	49 D	1	2	0723	•90	1.35	78	78
SIMEIZ	27	0722 E	0810	0725 U	N11 E25	5550	48 D	1	2	0725	1.60	1.60	115	115
VOROSHILOV	27	0902	0912	0906	N09 W02	5549	15 D	1	2	0845	2.72	2.80	98	98
PIRCULI	28	0633 E	1026	0830	N06 E10	5550	233 D	2+	1	18.60	2.14	2.14	89	89
PIRCULI	28	0738	0749	0742 U	N09 E61	5552	11	1	1	5.06	5.06	5.06	50	50
PIRCULI	28	0816	0843	0828	S10 E43	5551	27	1	3	0830	7.25	7.25	79	79
ABASTUMANI	28	0828 E	0856 D	0830	N05 E12	5550	28 D	2	3	0830	7.62	7.62	103	103
{PIRCULI	28	0902	0912	0906	S12 E54	5551	10	1	1	3.81	3.81	3.81	52	52
PIRCULI	28	0904	0917	0906	S16 E55	5551	13	1	1	2.34	2.34	2.34		
PIRCULI	29	0659	0716	0704 U	N13 E89	5557	17	1+	1	8.30	2.70	2.70	56	56
PIRCULI	29	0738	0750	0743 U	S06 E61	5554	12	1	1	8.30	2.70	2.70	51	51
KYOTO	30	0525 E	0542 D		S18 E21	5551	17 D	1	1	0525	2.28	2.28	90	90

SOLAR FLARES

JANUARY 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME				LOCATION			DURA- TION MINUTES	OBS. COND. UT	MEASUREMENTS			PROVISONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX. LAT.	MEATH. PLATE REGION	MEATH. LAT. DIST.	MEATH. AREA Sq. Deg.			CORR. AREA Sq. Deg.	MAX. WIDTH Hz			
PIRCULI	30	0915	E	0926	D	0921	U	S14	E20	5551	11	D	1	2.18	51
VOROSHILOV	31	0155		0205	D	0201		S17	E00	5551	55	D	2	5.25	81
PIRCULI	31	0717	E	0825		0740	U	S18	E07	5551	68	D	1	4.02	52
PIRCULI	31	0745	E	0805		0750	U	N03	W21	5550	20	D	1	2.51	53
PIRCULI	31	0900		0912		0906	U	N05	W20	5550	12	D	1	2.00	50

These flares are additional addenda to the February 1960 flares published in CRPL-F 187 Part B, March, 1960

ABASTUMANI, USSR PIRKULI, USSR E - LESS THAN & - PLUS
 KHARKOV, USSR SIMEIZ, CRIMEA, USSR D - GREATER THAN - - MINUS
 KIEV GAO, USSR VOROSHILOV, USSR U - APPROXIMATE □ - NOT RECORDED
 KYOTO, JAPAN

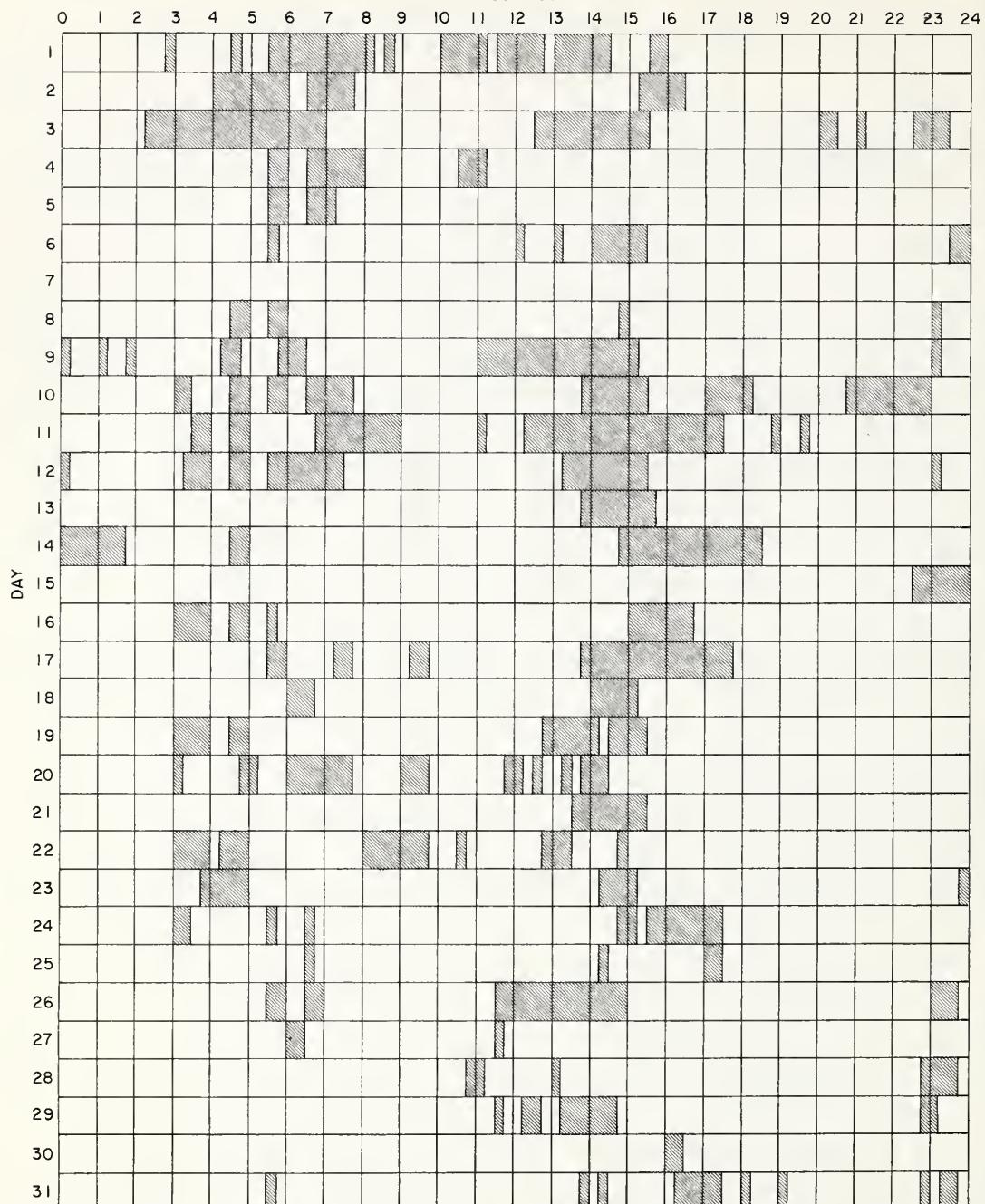
COMMERCIAL STANDARDS - BOULDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS*

(AMENDED)

JANUARY 1960

HOUR-UT



Stations Include:

Alma Ata
 Anacapri (Swedish)
 Arcetri
 Athens
 Climax
 Dunsink
 Good Hope

Hawaii
 Huancayo
 Kharkov
 Kiev GAO
 Kodaikanal
 Kyoto
 Lockheed

McMath
 Meudon
 Mitaka
 Moscow - G
 Nizamiah
 Ondrejov
 Pirculi

Royal Greenwich Observatory
 Herstmonceux
 Sacramento Peak
 Simeiz
 Uccle
 Voroshilov

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES
FEBRUARY 1960

OBSERVATORY	DATE FEB 1960	OBSERVED UNIVERSAL TIME			MAX. PHASE	DURA- TION MINUTES	MEASUREMENTS			PROVISONAL IONOSPHERIC EFFECT	
		START	END	LAT. MERC.			APPROX. PLATE REGION	TIME UT	MEAS. AREA Sq. Deg.		
PIRCULLI	01	1000	1026	1012 U	S16 E71	5562	26	1+	3	1012	6.27
VOROSHILOV	02	0038	0129	0049	S16 W15	5591	51	2	2	4.96	93
VOROSHILOV	02	0104	0109	0105	S15 E63	5562	5	1	2	2.08	61
MOSCOW G	03	0955 E	1033 D	S08	W27	5561	38	D 1+	1	1004	7.94
{ VOROSHILOV KYOTO	03	2343 E	0110	2347	S16 W44	5591	87	D 1+	2	3.52	S-SWF
	03	2346	0027 D	S16 W42	5561	41	D 2		2346	7.27	
VOROSHILOV	04	0027	0108	0034	S13 E34	5562	41	1+	2	2.80	
VOROSHILOV	04	0112	0137	0116	N09 W36	5552	25	2	2	4.21	
ABASTUMANI	04	0738 E	0820	0754 U	S14 W50	5591	42	D 1	1	0815	2.53
{ ABASTUMANI KIEV	04	0838 E	0905 D	0848	N08 W39	5562	27	D 2	1	0847	7.25
	04	0848 E	0909	0852	N11 W38	5552	21	D 2		6.00	9.83
SIME12	05	0703 E	0725 D	S16 W09	5560	22	D 1	1	1	0703	2.30
KYOTO	06	0158 E	0215 D	N10 W57	5552	17	D 1	3	0158	1.45	
ABASTUMANI	06	0720	0734 D	0725	N10 W64	5550	14	D 1	3	0725	2.31
KHARKOV	07	1022 E	1119 D	N12 W85	5552	57	D 1	2	0928	2.29	
{ KHARKOV KIEV	07	1107 E	1138 D	N25 E63	5566	31	D 1	2	1111	8.70	
	07	1134 E	1146 D	1136	N13 W85	5592	12	1+	2	5.71	1.00
KYOTO	08	0432 E	0445 D	N10 W85	5552	8	D 1+	2	1142	3.40	
VOROSHILOV	09	0018 E	0040	S17 W60	5560	13	D 1	2	0432	13.00	
VOROSHILOV	09	0024	0218 D	0120	S15 W37	5562	22	D 1+	2	1.50	1.00
PIRCULLI	11	0646 E	0720	0656 U	S19 W63	5562	34	D 1	3	0656	2.48
PIRCULLI	11	0737	0747	0740	S15 W69	5562	10	1	3	0740	5.26
PIRCULLI	12	0620	0643	0626	S19 W76	5562	23	1+	3	0626	2.01
PIRCULLI	12	0710	0750	0717 U	S23 E40	5572	40	1	3	0717	2.08
KYOTO	13	0432 E	0505	0435	N12 E26	5570	33	D 1	2	0436	2.08
PIRCULLI	13	0950	1008	0957	N11 E25	5570	18	1	2	0957	2.75
PIRCULLI	13	1000	1033	1017 U	S25 E23	5572	33	1	2	1017	2.08
PIRCULLI	13	1042 E	1055	1044 U	N14 E17	5570	13	D 1	2	1044	3.28
PIRCULLI	13	1055	1102	1058	N23 W23	5566	7	1	2	1058	1.84
PIRCULLI	13	1056	1110	1101	S24 E23	5572	14	1	2	1101	2.94
KYOTO	19	0536	0603 D	N09 W17	5574	27	D 1		0536	1.84	
KYOTO	23	0033	0037 D	N07 E38	5581	4	D 1	2	0033	2.91	
PIRCULLI	23	0712 E	0947 D	0723 U	S20 E25	5580	155	D 1+	2	0723	1.33
KYOTO	23	2337	0027	N06 E48	5581	50	1		2347	1.45	
VOROSHILOV	24	0040	0122	0104	S21 E14	5580	42	1	2	2.62	80
VOROSHILOV	24	0040	0122	0104						70	

SOLAR FLARES

FEBRUARY 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISONAL IONOSPHERIC EFFECT				
		START	END	APPROX. LAT.	MAX. PHASE	MER. DIST.			MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha					
KYOTO	24	0048	0058	S21	E13	5580	10	1	0055	4•57	1•58	100				
KYOTO	24	0524	0010	N05	E22	5581	□	1	0524	3•74		100				
KYOTO	24	2321		S22	E00	5580	49	1	2321	3•12						
KYOTO	25	0600	0610	D	N11	E35	5584	10 D	1	0600	1•87		100			
PIRCULI	25	0755	E	0807	D	0800	U	S19	W06	5580	12 D	1+	59			
K'OTO	26	0127	0140	D	N08	E22	5584	13	D	1	0800	9•18				
{PIRCULI	26	0700	0955	D	S24	W13	5580	175	3	2	0127	5•82				
{SIMEIZ	26	0713	E	0845	D	S21	W18	5580	92	D	1	0716	22•04			
PIRCULI	26	0845	E	0945	U	S10	E76	5587	60	D	1+	0713	13•61	25•10	77	
PIRCULI	28	1018	E	1037	1021	N14	W10	5584	19	D	1	2	0849	1•84	14•50	86
									2	1021	1•84	2•01		6•50	56	
														60		

These flares are additional addenda to the January 1960 flares published in CRPL-F 186 Part B, February 1960.

ABASTUMANI	PIRCULI, USSR	E - LESS THAN	& - PLUS
KIEV GAO, USSR	SIMEIZ, CRIMEA, USSR	D - GREATER THAN	- MINUS
KYOTO	VOROSHILOV, USSR	U - APPROXIMATE	□ - NOT RECORDED

COMMERCE - STANDARDS - BOLDER

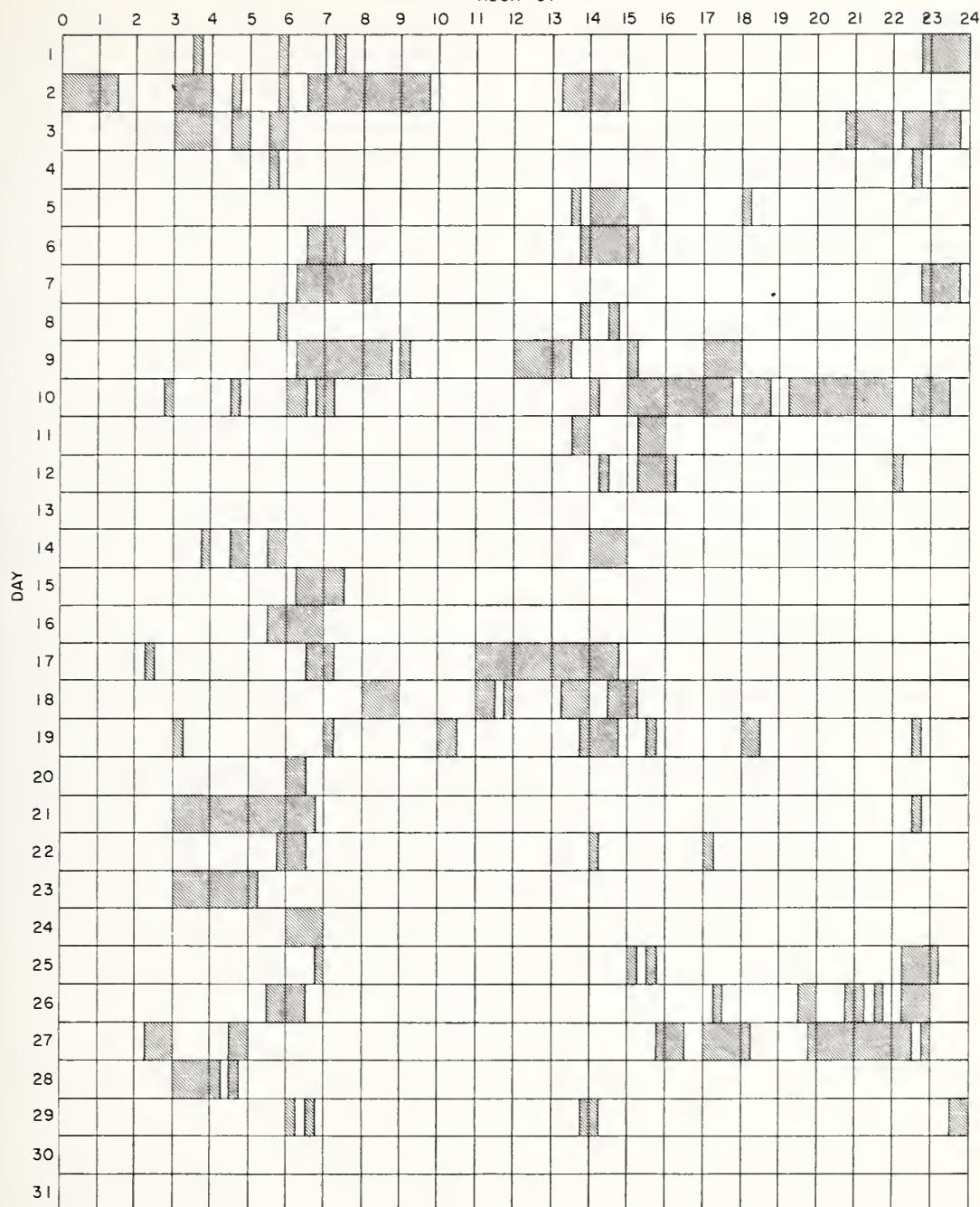
INTERVALS OF NO FLARE PATROL OBSERVATIONS

(AMENDED)

IIIr

FEBRUARY 1960

HOUR-UT



Stations Include:

Alma Ata	Huancayo	McMath	Royal Greenwich Observatory
Anacapri (Swedish)	Kharkov	Meudon	Herstmonceux
Arcetri	Kiev GAO	Mitaka	Sacramento Peak
Athens	Kodaikanal	Moscow - G	Simeiz
Dunsink	Kyoto	Nizamiah	Uccle
Good Hope	Lockheed	Pirculi	Voroshilov
Hawaii			

COMMERCIAL - STANDARDS - GOALS

SOLAR FLARES

MARCH 1960

OBSERVATORY	DATE MAR 1960	OBSERVED UNIVERSAL TIME				LOCATION	IM- POR- TANCE	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.			MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H α	
{ MEUDON GOOD HOPE	01	1237	1254 D	1307	N22	W08	5586	17 D	1	1241	2.50
{ KYOTO	02	0033	E	0041	N22	W13	5586	8 D	1	0035	1.66
{ MITAKA	02	0037	E	0055	N21	W14	5586	18 D	1+	0039	6.03
VOROSHILOV	02	0036	E	0040	N08	W74	5581	4	2	1038	2.44
{ KRASNAYA	02	0024	E	0006	S11	E12	5587	42	2	3.60	3.60
{ PIRCULI	02	0025	E	0020	S10	E13	5587	55	1	5.21	60
{ PIRCULI	02	0115	E	0147 D	N25	W20	5586	92 D	2	9.78	101
{ KRASNAYA	02	1102	E	1130 D	N20	W21	5586	28 D	2	1105	3.20
MEUDON	04	1505	E	1525	N03	E75	5591	20	1+	2	0026
VOROSHILOV	05	0023	E	0044 D	N12	W85	-5584	21 D	1+	0026	6.3
PIRCULI	05	0910	E	0935 D	S07	E80	5593	25 D	2	15.30	85
PIRCULI	05	0922	E	0935 D	S00	E65	5591	13 D	1	6.24	50
{ MEUDON	05	0930	E	1044 D	N09	E50	5590	74 D	1+	7.33	53
{ GOOD HOPE	06	0940	E	1020 D	N22	E60	5592	40 D	1	0951	2.20
GOOD HOPE	06	0950	E	1000 D	N23	E62	5592	10 D	1	1055	2.60
GOOD HOPE	06	1052	E	1106 D	S08	E67	5593	16 D	1	1059	1.00
VOROSHILOV	06	2304	E	0031	N23	E62	5592	14 D	1	2	4.25
{ GOOD HOPE	07	0919	E	0942	N13	E74	5595	23	1	0923	1.10
UCCLE	07	0921	E	0930	N09	E73	5595	9	1+	2	0924
UCCLE	07	1228	E	1244	N09	E72	5595	16	1	4	1228
GOOD HOPE	09	0923	E	0950	S10	W68	5587	27	1	0927	90
GOOD HOPE	09	1104	E	1116	S10	W69	5587	12	1	1109	2.50
GOOD HOPE	09	1227	E	1243	S10	W69	5587	16	1	1231	1.00
GOOD HOPE	09	1257	E	1308 D	S10	W69	5587	11 D	1	1304	2.90
SIMEIZ	10	0816	E	0836	S06	E01	5593	20	1	2	0818
UCCLE	10	0926	E	0945	N27	E38	5595	19	1	3	0928
UCCLE	10	1043	E	1052	N19	E75	5598	9	1	2	3.00
NIZAMIAH	11	0344	E	0352 D	N22	E04	5592	8 D	1	2	0347
{ KIEV	11	1055	E	1130	N25	W02	5592	35	1	1	1.96
{ KRASNAYA	11	1056	E	1121	N22	W12	5592	25	1	2	1104
GOOD HOPE	12	0815	E	0840	S08	W15	5593	25 D	1	0817	2.30
GOOD HOPE	12	0950	E	1022	N12	W86	5588	32	1	0954	.50
MITAKA	13	0032	E	0043	S11	E90	5600	11 D	1	1	0035
MITAKA	13	0210	E	0243	S11	E89	5600	33	1	1	2.15
{ ABASTUMANI	13	0750	E	0830 D	N03	W33	5591	40 D	1	1	1.90
{ SIMEIZ	13	0800	E	0845 D	N01	W35	5591	45 D	1	1	1.80
VOROSHILOV	14	0010	E	0045	N10	W42	5591	35	1	2	1.63
VOROSHILOV	14	0052	E	0057	N10	W43	5591	32	1	2	1.54

SOLAR FLARES

MARCH 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			APPROX. LAT.	APPROX. MAG. DIST.	LOCATION	DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — UT	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE								MEAS. AREA Sq. Deg.	COH. AREA Sq. Deg.	MAX. WIDTH H _a		
{ PIRCULI	14	0655	0950 D	0750	51.1	W4.3	5593	175	D	2	0748	9•07	21•50	9•07	12•00	6.1
SIME12	14	0731 E	0820 D	0748 U	51.0	W4.4	5593	49	D	1+	0749	3•10	4•20	4•20	4•20	6.3
GOOD HOPE	14	0740	0817	0749	50.9	W4.2	5593	37		1	0315	2•51	3•67	2•22	2•38	
MITAKA	15	0308	0323	0315	51.0	W4.9	5593	15	D	1	0511	1•50	1•50	1•50	1•50	9.6
MITAKA	15	0511 E	0526 D	0527 D	51.1	E5.8	5600	15	D	1+	0315	2•51	3•67	2•22	2•38	9.6
{ PIRCULI	15	0549 E	0627 D	0553 U	50.5	W6.0	5593	38	D	1+	0511	1•50	1•50	1•50	1•50	5.1
PIRCULI	15	0549 E	0740 D	0635 U	50.8	W6.0	5593	111	D	1+	0511	1•50	1•50	1•50	1•50	5.0
PIRCULI	15	0717 E	0928 D	0925 U	50.9	E5.8	5600	131	D	1	1241	5•23	5•23	5•23	5•23	5.9
GOOD HOPE	15	1240	1248	1241	N2.3	W6.0	5592	8		1	1241	•90	2•30	2•30	2•30	
GOOD HOPE	19	0902 E	0915		N1.2	W9.0	5595	13	D	1	0910	•80				
UCCLE	19	1446	1520		N2.4	E5.8	5607	34		1	4					
KHARKOV	21	1043 E	1051		N2.6	E3.7	5607	8	D	1	1045					
UCCLE	21	1520	1547		N1.9	E3.3	5607	27		2	4	1530	6•00			
{ GOOD HOPE	22	0856	0926	0859	N2.4	E7.7	5611	30		1	0859	•90				
UCCLE	22	0909 E	0916	0904	N2.5	E8.0	5611	□		3	0904	•90				
GOOD HOPE	22	0859	0911	0904	N1.9	W6.0	5599	17		1	0904	•90				
KHASNAYA	22	0901	0915 D	0905	N2.1	W5.9	5599	10		1	0903	•90				6.5
KHARKOV	22	0909 E	0936		N2.0	W6.0	5599	14	D	1	0903	4•57	10•20	2•00	2•00	
{ ALMA-ATA	23	0633	0743	0656	N0.9	E0.5	5606	70		1	0656	2•65				5.4
ALMA-ATA	23	0633	0744	0656	N1.1	E0.1	5606	71		1	0656	3•64				5.4
GOOD HOPE	23	0636	0704	0643	N1.1	E0.3	5606	28		1	0643	2•90				3.00
ALMA-ATA	24	0645	0720 D	0705	N2.0	W3.2	5604	35	D	2	0705	4•31				8.4
UCCLE	24	1003	1040	1015	N1.8	W3.3	5604	37	1+	4	1129	1•14				
KHARKOV	24	1127	1133 D		S2.6	E74	5612	6	D	1	4	1129	1•14	3•20	1•70	
GOOD HOPE	25	0927	0942	0932	N1.9	W4.5	5604	15		1	0932	1•70				
GOOD HOPE	25	0946	1026	1004	N1.9	W4.5	5604	40		1	1004	1•70	2•70	2•70	2•70	
PIRCULI	26	0558 E	0611 D	0603	N1.6	W6.0	5604	13	D	1	1005	6•92				5.3
PIRCULI	26	0558 E	0611 D	0606 U	S1.3	E0.3	5609	13	D	1	1005	5•57				5.1
KHARKOV	26	1000 E	1007 D		S1.3	W8.2	5600	7	D	1	2258	•52	2•70	2•70	2•70	
VOROSHILOV	26	2240 E	2342		N2.4	W0.2	5610	62	D	1	3	2258	•35			
MITAKA	27	0153 E	0200 C		N2.0	W4.6	5607	7	D	1+	1	0153	3•72			
MITAKA	27	0407 E	0438	0412 U	N2.0	W4.9	5607	31	D	1	0412	1•51				10.7
{ PIRCULI	27	0657 E	0912 D	0740 C	N2.2	W4.6	5607	135	D	3		26•40				8.0
SIME12	27	0734 E	0830 D	0740 U	N2.0	W5.2	5607	56	D	1	0740	2•26				8.1
{ KHASNYA	27	0737 E	0749 D	0741	N2.0	W5.3	5607	12	D	1+	0741	2•70				9.5
KHASNYA	27	0801 E	0853 D	0822 U	N2.2	W4.4	5607	52	D	1	0892	1•82				8.5
GOOD HOPE	27	0836 E	0923		N2.3	W4.8	5607	47	D	2	0836	3•10				
GOOD HOPE	27	0911	0933	0915	S2.5	E4.4	5612	22		1	0915	1•50				2.10
ALMA-ATA	28	0555 E	0800 D	0652	N1.2	E4.5	5615	125	D	1	2	0652	3•32			
GOOD HOPE	28	0729	0753	0736	N1.9	W8.2	5604	24		1	0736	•90				5.7

SOLAR FLARES

MARCH 1960

OBSERVATORY	DATE MAR 1960	OBSERVED UNIVERSAL TIME			APPROX. LAT.	APPROX. MTR. DIST.	LOCATION	MEAS. FLAG REGION	DURA- TION - MINUTES	IM- POR- TANCE -	OBS. COND.	TIME - U T	MEASUREMENTS			PROVISONAL IONOSPHERIC EFFECT		
		START	END	MAX. PHASE									MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _o			
SIMEIZ	28	0828	0855	D	0841		N18	W70	5607	17	D	1	1	0841	1.08	3.30	70	
{	PIRCULI	29	0640	E	0945	D	0713	N12	E30	5615	185	D	2+			24.60	1.14	
ALMA-ATA	29	0650	0722	D	0703		N13	E33	5615	32	D	1+			3.32	4.30	8.1	
{	ABASTUMANI	29	0656	1016	0711		N12	E31	5615	200	2+				10.88	13.86	108	
KODAIKANAL	29	0835	E	0845	D	0837	N12	E30	5615	10	D	2			0837	5.80	1.80	
PIRCULI	29	0804	0820	D	0809		N25	W74	5607	16	1+				9.51	7.10	122	
{	ABASTUMANI	29	0837	E	0847	D	0842	N22	W70	5607	10	D	1+			1.63	6.74	62
PIRCULI	29	0837	E	0931	D	0851	U	N22	W77	5607	54	D	2			14.00	76	76
ABASTUMANI	29	0959	E	1012	D	1001	U	N19	W86	5607	13	D	1+			1.82	9.22	76
MITAKA	30	0125	E	0132			N17	W86	5607	7	D	1			0127	1.01	2.60	
MITAKA	30	0216	0240		0219		N09	E15	5615	24	1+				0218	6.03	134	
{	GOOD HOPE	30	0717	0754		0725	N12	E22	5615	37	1				0725	4.50	3.37	
SIMEIZ	30	0719	E	0800	D	0736	N11	E18	5615	41	D	1+			0736	4.71	120	
SIMEIZ	30	0856	E	0907	D	0901	U	N10	E20	5615	11	D	1			0901	2.50	1.18
{	ALMA-ATA	31	0442	E	0543		N05	E04	5615	61	D	1+			0505	5.66	74	
ALMA-ATA	31	0442	E	0545		0508	N08	E02	5615	63	D	1			0508	2.65	134	
{	PIRCULI	31	0655	E	0715		N09	E01	5615	20	1+				0702	8.06	70	
GOOD HOPE	31	0700	E	0716		0702	S11	W61	5609	16	1				0702	1.20	64	
{	PIRCULI	31	0715	E	0826	D	N13	E02	5615	71	D	1+				11.80	2.50	57
SIMEIZ	31	0800	E	0805	D	0805	U	N09	E01	5615	5	D	1			0805	1.17	108
GOOD HOPE	31	0806	E	0807	D	0807	N12	E04	5615	1	D	1			0806	3.00	3.10	
MEUDON	31	0840	E	0920	D	0920	N13	E03	5615	40	D	1					10.40	
KIEV	31	1116	E	1326	D	1228	U	N10	W00	5615	130	D	2					66

These flare reports are addenda to the March 1960 flares published in CRPL-F #188, Part B, April 1960.

CAPRI G ANACAPRI - GERMAN
CAPRI S ANACAPRI - SARDINIAN
GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV* KIEV UNIVERSITY
KODAIKANAL KODAIKANAL
KRASNAYA KRAZNSAYA PAKHRA
LOCKHEED LOS ANGELES

MOSCOW-G MOSCOW - GALASH
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK SACRAMENTO PEAK
SCHAUNISLAND SCHAUINSLAND
USNRL UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE
ARBITRARY UNITS (0-40), NOT PERCENT
OF CONTINUOUS SPECTRUM.

E - LESS THAN & - PLUS
D - GREATER THAN - MINUS
U - APPROXIMATE □ - NOT REPORTED

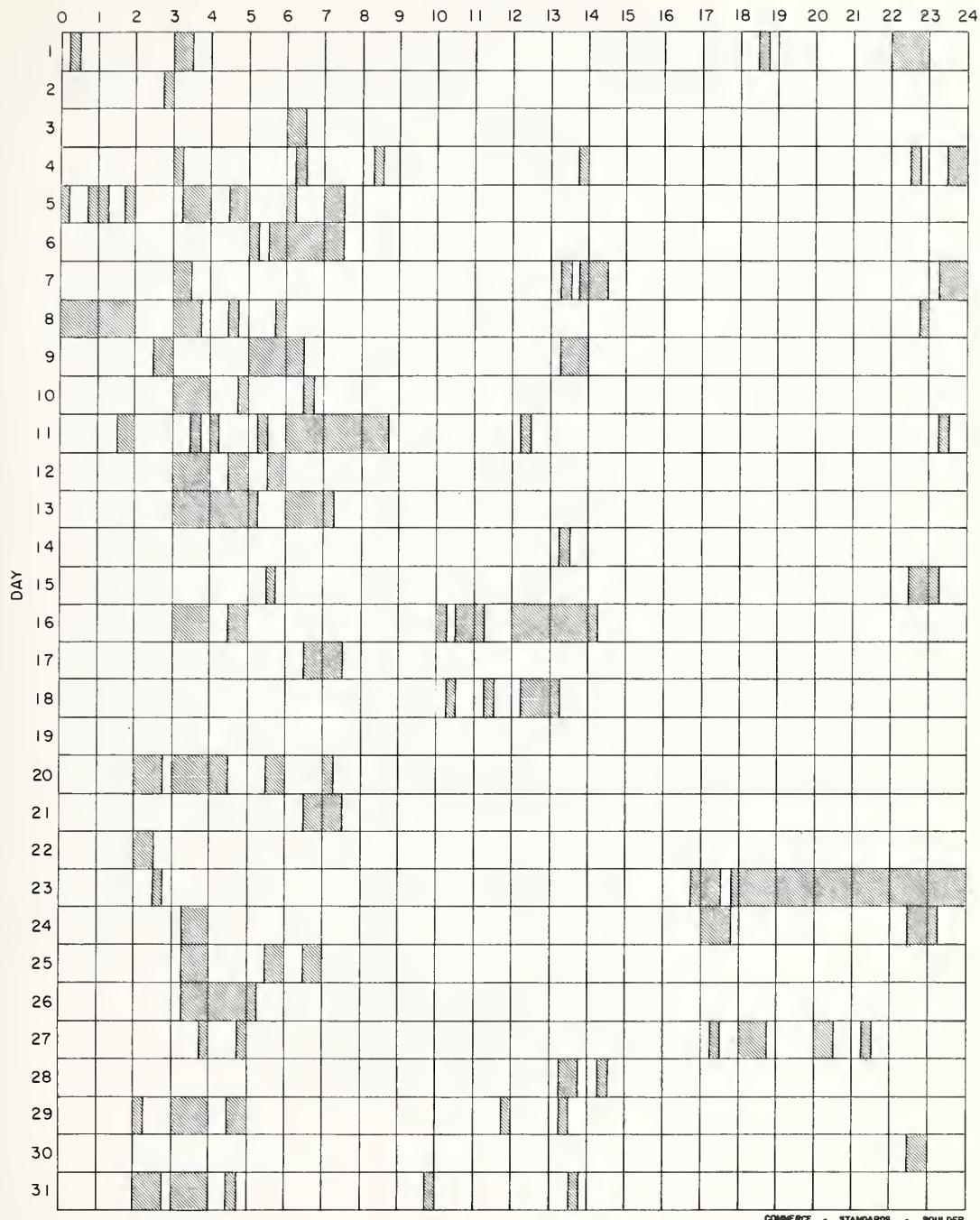
LOCKHEED OBSERVATIONS: ALL VALUES IN THE MAXIMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A SCALE OF 10 TO 40 - NOT PERCENT OF THE CONTINUOUS SPECTRUM.

COMMERCIAL - STANDARDS - BOLDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS
(AMENDED)

IIIv

MARCH 1960
HOUR-UT



COMMERCE - STANDARDS - BOULDER

Stations Include:

Abastumani	Huancayo	McMath	Royal Greenwich Observatory
Alma Ata	Kharkov	Meudon	Herstmonceux
Anacapri (Swedish)	Kiev GAO	Mitaka	Sacramento Peak
Arcetri	Kodaikanal	Moscow G	Simeiz
Athens	Krasnaya Pakhra	Nizamiah	Uccle
Good Hope	Kyoto	Ondrejov	Voroshilov
Hawaii	Lockheed	Pirculi	

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

MAY 1960

May 1960	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 190B
4	1015	1050	S-SWF	5	3	KU, NE, SW, CW***	1015
5	0305	0354	Slow S-SWF	5	1+	AD, AN, OK	*
6	1346	1400	S-SWF	5	1	BE, HU, MC, PR	
6	1427	1658	Slow S-SWF	5	3	BE, BO, FM, HU, MC, NE, PR, WS	1404
9	0208	0320	Slow S-SWF	1	2+	OK	*
9	0700	0838	Slow S-SWF	1	2	OK	0704E
9	1220	1315	Slow S-SWF	5	2-	BE, FM, HU, MC	
9	2325	2340	S-SWF	3	1	OK, TO	2310
10	0208	0238	S-SWF	1	1	OK	*
11	1402	1435	Slow S-SWF	5	1	BO, FM, HU, MC, PR	1338
11	2052	2104	S-SWF	5	1	AD, BE, MC, PR	2050
11	2105	2155	Slow S-SWF	5	2+	AD, BE, BO, FM, HU, LA, MC, OK, PR, TO, WS	2050
12	0220	0242	S-SWF	1	1-	OK	*
12	0833	0853	Slow S-SWF	3	2	BR, SW	0817E
12	1120	1132	Slow S-SWF	3	1+	BR, NE	*
12	1348	1722	Slow S-SWF	5	3	FM, HU, LA, MC, NE, PR, SW, WS, CW***	1310E
13	0512	0853	S-SWF	5	3+	AD, CA, NE, OK, PU, SW, TO, CW++, CW***	0522E
14	0348	0430	S-SWF	1	1-	OK	*
15	0312	0640	S-SWF	5	3	AD, AN, OK	*
15	1518	1530	S-SWF	5	1	BE, BO, FM, HU, MC, PR	1412
16	0510	0550	Slow S-SWF	1	1	OK	*
17	0205	0232	S-SWF	5	1	AD, AN, OK	*
17	0418	0445	S-SWF	1	1	OK	*
24	2225	2253	C-SWF	4	1+	AD, BO, FM	
25	0230	0325	S-SWF	5	2	AD, AN, OK, TO, CW+	*
25	0450	0520	Slow S-SWF	1	1	OK	0454E
25	0647	0728	Slow S-SWF	1	1-	OK	*
25	1755	1920	C-SWF	5	2-	AN, BE, HU, MC, WS	1752
26	0914	1000	S-SWF	5	2	BR, JU, NE, PU, SW, CW***	0818
27	1415	1445	Slow S-SWF	5	1+	BE, FM, MC, PR, PU, WS	1414
27	2128	2140	S-SWF	5	1	AD, AN, BE, BO, LA, MC, OK, PR, WS	2125
28	1410	1440	S-SWF	5	1+	BE, FM, HU, MC, NE, PR	1357
29	0739	0754	S-SWF	5	1	NE, OK, PU	0725E
30	0635	0705	S-SWF	1	1-	OK	*
30	0950	1008	S-SWF	1	2	PU	*
30	1800	1822	S-SWF	4	1-	BE, MC, PR, WS	1802
31	2115	2133	S-SWF	5	1+	AD, BE, HU, LA, MC, PR, WS	2100E

BR = Breisach, C.F.R.

CA = Canberra, Australia

JU = Juhlesruh, C.D.R.

KU = Kuhlungsborn, G.D.R.

LA = Los Angeles, Calif.

NE = Nederhorst den Berg, Netherlands

PU = Prague, Czechoslovakia

SW = Enkoping, Sweden

TO = Hiraiso Radio Wave Observatory, Japan

CW* = Cable and Wireless, Barbadoes

CW** = Cable and Wireless, Somerton, England

CW*** = Cable and Wireless, Brentwood, England

CW+ = Cable and Wireless, Hong Kong

CW++ = Cable and Wireless, Singapore

COMMERCE - STANDARDS - BOULDER

(Sudden Cosmic Noise Absorption
 Sudden Enhancements Of Atmospherics)
 Solar Noise Bursts At 18 Mc.

MAY 1960

May 1960	CLASS		WIDE SPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA		BEGIN	MAX.	END		
1			1	4	1610		1612	BO, MC
1			1	4	1633		1636	BO, MC
1			1	4	1741		1742	BO, MC
1			2	4	1748		1755	BO, MC
1			1	4	1821		1823	BO, MC
2			1	4	1450		1505	BO, MC
3		1	3	3	1027	1031	1058	A1, A5
3		1+	3	3	1240	1252		A1, A3, A5
3		2	3	3	1302	1319	1340	A1, A3, A5
3			1	5	1917		1923	BO, HA, MC
4		1	3	3	1016	1029	1125	DU, NE
4			1	1	1029		1034	RE
4			2	4	1600		1617	BO, MC
{ 6	6	2	3	5	1430	1453	1630D	A1, A2, A3, A9, BO, DU, MC, NE
				4	1431		1440	BO, MC
				4	1440E		1615	BO, MC
6		1-		3	1725	1730	1745	A1, A2
{ 6	6	2		1	1832	1854	2020	55 BO
				5	1835			A2, BO, MC
{ 6	6	3		1	2206	2255		75 BO
				1	2208	2305		BO
7			1	4	1829		1830	BO, MC
7			1	5	2028		2029	BO, HA, MC
7			1	5	2046		2048	BO, HA, MC
9			1	4	1855		1857	BO, MC
9			1	5	1928		1931	BO, HA, MC
9			1	4	2148		2150	BO, HA
9			1	5	2158		2202	BO, HA, MC
{ 9	9	1		4	2326	2332	2345	25 BO
				5	2348		2351	BO, MC
{ 11	11	3		5	2050	2119	2210	60 BO, HA, MC
				5	2051	2125	2220	A9, BO, MC
12		1+		3	0947	0953	1040	A1, A3, A10
{ 12	12	2		4	1345	1410		40 BO, MC
				5	1345	1404	1531	A1, BO, DU, MC
12		1+		3	1440	1450	1515D	A1, A10
12			1	1	1455		1500	RE
12			1	4	1640		1651	BO, MC
12			2	5	1748		1751	BO, MC, RE
12			1	5	2212		2214	BO, HA
{ 13	13			1	0520			CO
				1	0522	0537	0601	DU
13		2		4	1520		1605	BO, MC (Series of bursts)
13		1		4	1758		1915	BO, MC (Series of bursts)
13			1	5	2035		2048	BO, HA, MC
13			1	5	2138		2144	BO, HA, MC
13		2		5	2153		2202	BO, HA, MC

IONOSPHERIC EFFECTS OF SOLAR FLARES

(Sudden Cosmic Noise Absorption
 Sudden Enhancements Of Atmospherics
 Solar Noise Bursts At 18 Mc.)

MAY 1960

DATE	CLASS			DEFINITENESS	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	REMARKS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
14			2	5	1300E		0200D		BO, <u>MC</u> , HA (Noise storm) Strong peaks at 1435, 1502, 1522, 1547, 1650, 1827, and 2040.
15			2	5	1300E		0200D		BO, <u>MC</u> , HA (Noise storm) Peaks at: 1520, 1808, 1947, 2152, 2308, and 2320.
15	1	1-		4	1524	1527	1540	20	BO, MC
15		3		5	1525	1527	1558		<u>A1</u> , A3, A9
16				3	1310	1323			<u>A1</u> , A3, <u>A5</u>
16			1	1	1455		1459		RE
16		2+		3	1900		1925		A3, <u>A5</u>
17			2	4	1743		1751		BO, MC
17			3	4	1757		1900		BO, <u>MC</u> (Noise storm)
18			1	5	1300U		0200U		BO, HA, MC, (Noise storm) peaks at 1752 and 2110.
19			2	4	1610		1615		BO, MC
19			1	4	1801		1803		BO, MC
19			2	5	1914		1921		BO, HA, <u>MC</u>
19			2	5	1957		2011		BO, HA, <u>MC</u>
19			2	5	2245		2300		BO, <u>HA</u>
20			1	5	1300E		0200D		BO, HA, MC, RE (Noise storm)
21			1	5	1300E		0200D		BO, HA, MC (Noise storm)
23			1	5	1938		1943		BO, HA, MC
23			1	5	2043		2045		BO, HA, MC
23			1	4	2132		2134		BO, MC
24			2	1	0627		0742		JU
25			1	1	0226		0228		HA
25	1		1	1	0228	0233	0250	25	HA
25		2	1	1	0231		0331		HO
25			2	5	1300E		0200D		BO, HA, MC, RE (Noise storm)
26			□	1	0908	0934	1024		DU
26			2	5	1300E		0200D		BO, HA, MC, RE (Noise storm)
27			2	5	1300E		0200D		BO, HA, MC, RE (Noise storm)
27			1+	5	1417	1437		10	A1, A3, A5, <u>BO</u> , DU
27			2	4	1418		1428		BO, MC
27	1		1	1	1428	1430			<u>BO</u>
27			1	3	2017	2022	2045D		A1, A3, <u>A5</u> , A10
27			1+	4	2129	2135U	2200	25	A2, A3, <u>A5</u> , A6, <u>A10</u>
27	1		5	5	2130	2133	2155		BO, HA
28			1	5	1413	1425	1445		A3, <u>BO</u> , DU, MC
28	1		4	4	1414	1420	1440	15	<u>BO</u> , MC
29			1	4	1542		1547		BO, MC
30			1	5	1647		1649		BO, MC, RE
30			2	5	1706		1712		BO, MC, RE
30			2	5	2042		2047		BO, HA, MC, RE
30			3	5	2242		2245		BO, HA, MC, RE
31			□	1	0717	0703	0746		DU
31			1	4	1850		1858		BO, MC
31			1	5	2017		2024		BO, HA, MC
31	1			5	2116	2123	2140	20	BO, HA, MC

COMMERCE - STANDARDS - BOULDER

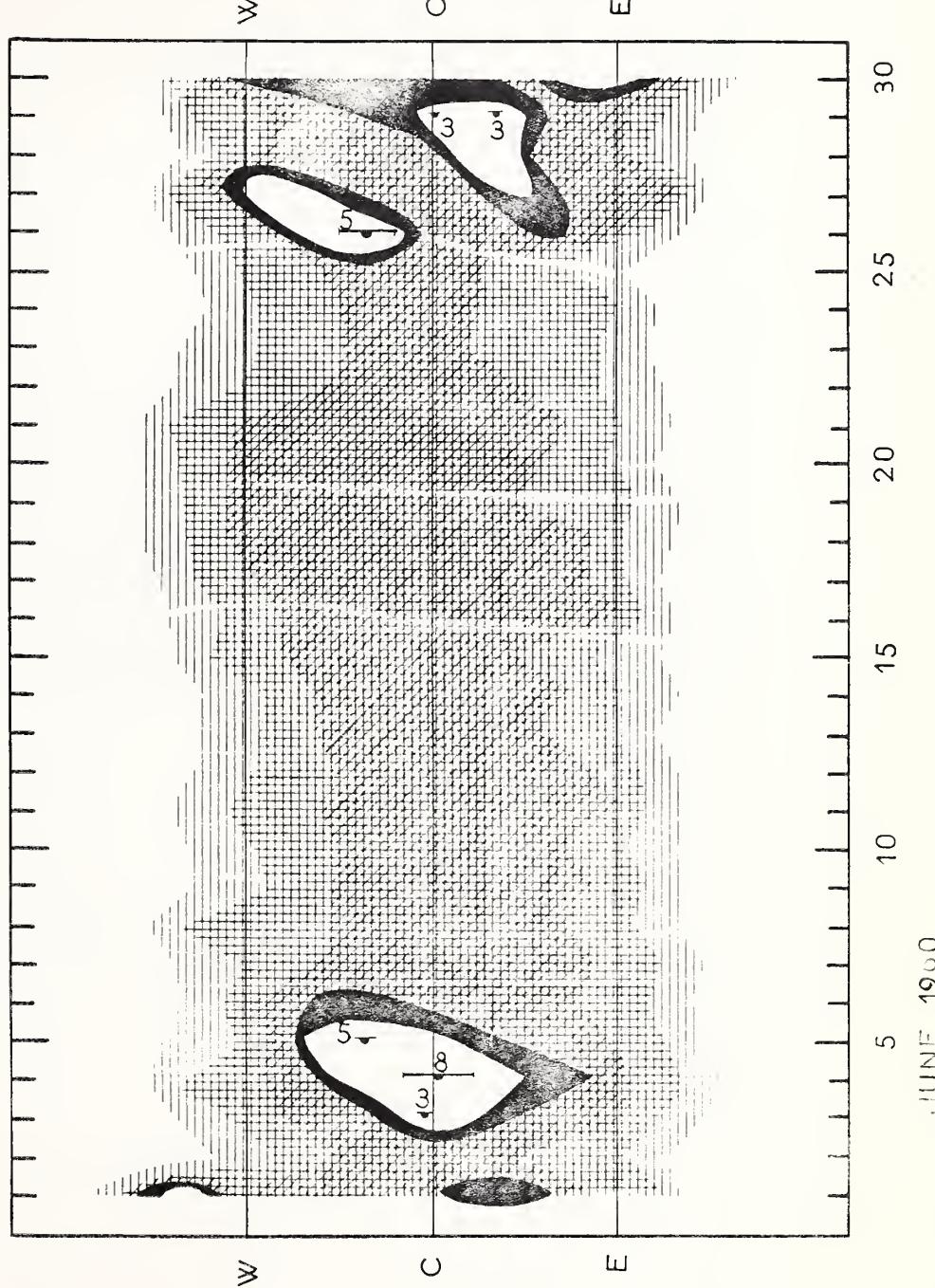
Notes: CO = College, Alaska.
 Sacramento Peak had no usable record for May 1960.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

JUNE 1960

169 Mc

Nancay



**SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES**

Ottawa

JUNE 1960

2800 Mc

June 1960	Category	Time	Duration	Intensity		Remarks
				Sec	Min	
1	4 Post Increase	b1045	>3	15		25*
1	6 Complex	2003		16		9
1	1 Simple 1	2149		5		2151
3	1 Simple 1	1348		3		1349
4	2 Simple 2	2100.5		2		2101.3
5	8 Group (2)	2218	>1	34		
	1 Simple 1	2218		7		2221.5
	6 Complex	2241		16		2245
	4 Post Increase			>55		5
6	2 Simple 2	2231		4		2232.7
8	8 Group (2)	1750	1	54		
3	Simple 3A	1750		50		1817
2	Simple 2	1753		3.5		1754
3	Simple 3	1854		50		1918
8	1 Simple 1	2032.5		1.5		2033
8	1 Simple 1	2118.5		3.5		2119.5
9	3 Simple 3	1615		15		1620
9	6 Complex	2023		20		2039
	4 Post Increase			2	10	10
9	2 Simple 2 f	2315		5		2315.8
	5 Absorption	2320		35		-5
10	2 Simple 2	1439.5		5		1441
10	1 Simple 1	1933		3		1933.5
10	3 Simple 3A	1949		40		indet.
	2 Simple 2	1952.5		7		1954
11	1 Simple 1	2025.5		1		2026
11	3 Simple 3	2220		25		2230
13	2 Simple 2	1709.5		6		1712
	4 Post Increase			45		5
14	6 Complex f	0004.5		12		0010
	4 Post Increase			>10		7
						In sunset oscillations.
14	2 Simple 2	1043		4		1044.5
	4 Post Increase			10		8
14	3 Simple 3	2215		25		2222
18	1 Simple 1	1750.5		4		1751.5
19	6 Complex f	1331		14		1332
21	1 Simple 1	2314		3		2315.5
25	2 Simple 2f	1026		5		1026.9
25	6 Complex f	1148	1	28		1208.5
	4 Post Increase			3	44	425
25	2 Simple 2f	1701		15		1705
	4 Post Increase			1	00	8
25	2 Simple 2	1950		6		1951.3
25	7 Period Irregular	2037		40		2046
	Activity					700
26	3 Simple 3 A	1350	1	10		1417
	6 Complex f	1358.8		14		1408
						200
26	1 Simple 1	1649		2.5		1650
26	2 Simple 2	1802		5		1803.5
26	3 Simple 3 f	2045	1	00		2053.3
26	8 Group (2)	2259.5		8.5		
	2 Simple 2	2259.5		3		2300.5
	2 Simple 2	2303		5		2305
						12
						In Interference
27	3 Simple 3A	0002	>28			
	2 Simple 2	0012		4		indet.
27	8 Group (2)	1118		9		0012.8
	1 Simple 1	1118		2		30
	2 Simple 2	1124		3		1124.5
						10
27	3 Simple 3 A	1148		24		1157
	6 Complex	1149		5		1150.2
	2 Simple 2	1200		2.5		1201
27	1 Simple 1	1713.5		3.5		1715.2
27	2 Simple 2 f	2140		38		2154
	4 Post Increase			>2	00	30
28	6 Complex f	1215		10		1216.5
28	3 Simple 3 A	1855	1	15		1915
	7 Period Irregular	1858		10		1859
	Activity					35
28	2 Simple 2 f	2045		3.5		2047.5
						55

TIMES OF OBSERVATION

OTTAWA

HOURS OF OBSERVATION: APRIL, MAY, JUNE 1960

OBSERVING PERIOD:

April 1200 UT - 2320 UT (approx.)
May 1130 UT - 2345 UT (approx.)
June 1120 UT - 2410 UT (approx.)

with the following exceptions:

(1) No observations: April 4 - 1825 - 2050

(2) Observations commenced:

April 5 - 1515
April 20 - 1520
April 21 - 1525
April 22 - 1525
May 28 - 1445
June 13 - 1455
June 29 - 1500
June 30 - 1505

(3) Continuous observations on all days have
been interrupted for receiver calibration
and by sporadic interference.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
JUNE 1960

BOULDER

167 MC

June 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity	June 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	3	1234.4	1234.8	1.5	2*	19	3	0054.0	0054.0	1.1	2
1	2	1328.9	1328.9	1.6	2	19	3	0056.3	0056.3	0.3	2
1	3	1916.8	1916.8	0.4	2	19	8	1330.0	1332.0	3.0	3
1	3	1919.6	1919.6	0.3	2	19	8	1333.0	1335.8	5.0	3
1	9a	2003.4	2004.3	4.2	2	19	3	1339.2	1339.5	1.0	2
1	9b	2014.0	2019.4	36	2	19	2	1341.0	1344.9	4.5	2
2	3	0023.3	0023.3	0.2	2	19	2	1541.4	1541.4	2.0	2
2	3	1816.8	1817.2	1.5	2	20	3	0128.0	0128.5	2.0	3**
3	3	0040.0	0040.1	0.2	2	20	3	0134.5	0135.9	2.0	2**
3	2	1158.6	1158.6	2.4	2*	20	3	0152.0	0152.3	1.8	2**
3	3	1204.3	1204.7	0.7	2*	22	3	1744.0	1744.0	0.2	2
3	3	1933.6	1933.6	0.3	2	22	2	1752.0	1752.2	1.5	1
3	3	1940.5	1940.5	0.1	2	23	3	0149.0	0149.5	2.0	2**
4	3	0006.5	0006.5	0.1	2	23	3	0151.0	0151.2	1.0	2**
4	6	1130 E		882 D	2	23	2	1240.0	1241.5	4.0	1
6	3	1155.2	1155.2	0.4	2*	23	3	1556.5	1557.0	1.5	3
6	3	1243.0	1243.0	1.0	2*	24	3	1449.0	1449.0	0.8	2
6	3	1458.0	1458.0	0.3	2	24	3	1740.5	1740.5	0.3	2
6	3	1741.1	1741.1	0.1	2	25	3	0116.2	0117.2	1.6	2**
6	3	1823.2	1823.2	0.2	3	25	3	0120.0	0120.0	1.4	2**
6	3	1940.0	1940.0	0.2	2	25	3	1135.9	1135.9	0.9	2*
6	3	1957.0	1957.6	1.1	3	25	9	1156.0	1237.6	209	3*
6	3	2002.5	2002.5	0.3	2	25	9	1700.0	1709.3	37	3
6	3	2141.2	2141.2	0.6	2	25	2	1810.0	1814.0	15	2
6	3	2143.9	2143.9	0.3	3	25	3	1923.8	1923.8	0.3	2
6	3	2153.1	2153.1	0.1	2	25	3	1950.0	1951.0	2.0	3
7	7	2030.0		228 D	2	25	2	2030.0	2031.0	3.0	3
8	3	2032.0	2032.7	1.2	2	25	2	2039.9	2040.0	4.1	3
11	3	1219.9	1219.9	0.4	2*	25	9a	2045.0	2047.0	11	3
11	3	1306.8	1306.8	0.1	2	25	9b	2056.0	2110.8	51	3
11	3	1318.8	1318.8	0.3	2	25	9c	2146.0	2150.0	29	2
11	3	1452.1	1452.1	0.9	2	26	3	0103.3	0103.3	0.3	2**
11	3	1456.5	1456.5	0.6	2	26	6	1125 E		895 D	3
11	3	1534.1	1534.1	0.8	2	26	3	1159.0	1200.5	2.0	2*
11	3	1644.6	1644.6	0.9	2	26	9a	1350.0	1400.0	16	3
11	3	1730.5	1731.0	1.2	2	26	9b	1406.0	1407.0	5	2
11	3	1758.5	1758.5	0.2	2	26	3	1659.6	1701.0	2.4	3
13	3	0029.0	0029.0	0.4	2	27	9a	0005.0	0013.8	10	3
13	3	0032.2	0032.2	0.2	2	27	9b	0015.0	0019.5	40	3
13	3	1216.0	1217.5	2.0	2*	27	3	1148.0	1149.9	2.6	3
13	3	1606.2	1606.2	0.1	1	27	3	1402.0	1402.5	1.0	3
13	2	1708.9	1709.8	4.9	2	27	3	1433.8	1433.8	0.2	2
14	3	0004.5	0005.0	0.8	2	27	6	1730 E	2204	531 D	3
14	2	0006.5	0009.9	5	3	27	9	2146.0	2155.5	74	2
14	3	0205.9	0206.2	0.5	2**	28	6	1601 E		145 E	2
14	3	1215.0	1215.0	0.6	1*	28	8	1215.0	1216.0	9	2*
16	3	0143.5	0143.5	0.4	2**	30	3	1319.5	1319.8	1.0	3
16	3	0155.6	0155.6	0.2	2**	30	3	1510.0	1511.0	1.5	2
18	3	1745.8	1745.8	0.5	2	30	3	1725.0	1725.0	0.3	2
18	2	1750.0	1750.8	2.0	2						

* On sunrise pattern.

** On sunset pattern.

COMMERCE - STANDARDS - BOULDER

TIMES OF OBSERVATIONS

BOULDER

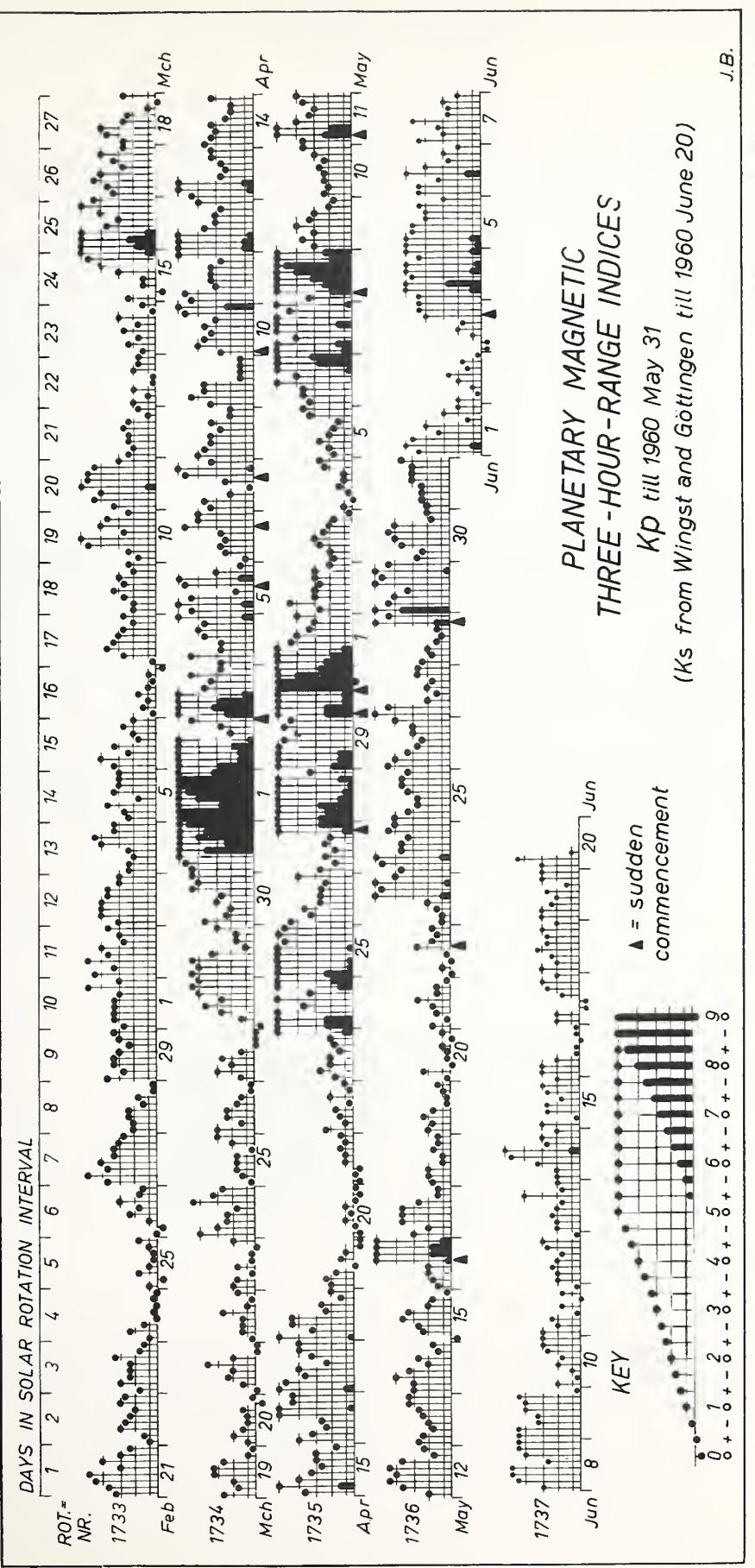
June 1960	U.T.	June 1960	U.T.
1	1132-0207	18	1300-1423 I 2015-2200
2	1128-1445		1438-2200 I 2324-0130
	1612-0209		2324-0219
3	1131-0209	19	1129-0219 I 2230-0045
4	1130-0212 I 0000-0152	20	1130-0219
5	1130-0212 I 1130-1510	21	1130-0219
	I 1715-2130	22	1130-0220
6	1130-0211	23	1130-2224 I 1925-2224
7	1130-0211		2304-0220 I 2304-0220
8	1130-0215 I 1630-2245	24	1130-0220 I 1130-1915
9	1130-0215 I 1845-0100	25	1130-0220
10	1130-0215 I 1915-2200	26	1125-0220
11	1129-0215 I 1845-0145	27	1132-1452
12	1128-0215 I 1830-2100		1730-0221
13	1128-0216	28	1130-1330
14	1128-0217 I 2115-2200		1601-1826
15	1126-0217	29	1315-1400 I 1600-0219
16	1206-0218 I 2100-2350		1515-0219
17	1132-0218 I 2100-0005	30	1132-0220 I 1515-0220

COMMERCE - STANDARDS - BOULDER

GEOMAGNETIC ACTIVITY INDICES

MAY 1960

May 1960	C	Values Kp								Sum	Ap	Final Selected Days
		Three hour		Gr. interval								
		1	2	3	4	5	6	7	8			
1	1.4	7-	6+	6-	4+	4o	3+	3o	4o	37+	49	Five
2	0.7	3-	4+	3o	3o	3-	3o	3o	2o	24-	15	Quiet
3	0.3	2-	2o	3-	3o	2+	2o	2-	1-	16o	8	
4	0.2	1o	0+	1-	1+	1o	1o	2+	3-	10+	5	4
5	0.5	2-	2o	3-	2o	2-	1+	3+	4-	18+	10	18
												19
6	1.6	3+	4-	4-	5o	4o	5+	7o	7+	39+	60	20
7	1.5	6-	6o	4o	5o	6o	5o	4+	5+	41+	55	22
8	1.9	3+	6+	7-	7+	8o	8+	6+	7-	53o	128	
9	1.0	3o	4-	3o	4o	3+	3o	2o	2-	24-	16	
10	0.7	2+	2o	2+	2+	3-	2+	3o	4-	21-	12	
												7
11	1.3	4-	7-	6+	4o	3+	3o	4-	4o	35-	42	Five
12	1.0	2o	4-	4+	4o	4+	4-	2-	2+	26o	20	Disturbed
13	0.7	3-	2+	2-	2o	2+	3-	3+	3+	20+	11	
14	0.7	3o	3o	4o	3+	2o	3-	1+	2-	21o	13	1
15	0.6	0o	2+	3-	4-	3+	2o	2-	1-	16+	10	6
												7
16	1.3	1+	2-	2o	2o	5+	6+	6+	6-	31-	42	8
17	0.9	3o	2o	4-	4-	4-	3-	1+	1+	21+	14	29
18	0.2	2-	2o	2o	1o	1o	2-	1+	1+	12o	6	
19	0.2	2o	2-	2+	2-	1-	1-	1o	1+	11+	5	
20	0.1	1-	2+	0+	1-	1-	1o	0+	1o	7o	4	
												5
21	0.2	2-	1-	1+	2-	3-	1+	1+	1-	11+	6	Ten
22	0.3	0+	1o	0+	1-	3-	2-	1+	2-	10-	5	Quiet
23	1.1	1o	1o	1+	2o	6-	5-	5+	4o	25o	26	
24	1.2	4-	5-	6-	4-	4-	3+	4+	4o	33o	31	3
25	1.1	4o	3+	3-	3-	3+	4-	4-	3+	27-	19	4
												5
26	1.1	4+	4o	3+	3-	2+	3o	3o	4o	27-	19	13
27	0.9	5o	4+	2o	1+	2o	2-	3-	3-	22-	16	15
28	0.9	2+	2-	2o	1+	1o	1+	6o	4+	20o	18	18
29	1.6	8-	4+	4o	3+	5o	5-	5+	4+	39-	54	19
30	1.1	3-	2+	4-	4o	4+	4o	2-	2o	25-	18	20
31	0.9	2o	2+	2+	2+	3o	3o	3o	4-	22-	13	21
												22
Mean:		0.88								Mean:	24	



CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
NORTH ATLANTIC

MAY 1960

May 1960	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by:				Geomag- netic K _{Fr}		
	00	06	12	18	00	06	12	18		1-7	1-7	1-3	1-7	Half Day (1)	Day (2)	
	to 06	to 12	to 18	to 24						days	days	days	days	Final	Js	SDW
1	2-	3+	5-	5-	1	1	4	5	(3+)	3	3	7		(5)	3	
2	5+	4+	6-	6+	5	5	6	6	5+	5	5	7		3	3	
3	7-	4+	6o	6+	6	6	6	6	6-	6	6	7		3	2	
4	7-	6o	6+	6+	6	5	6	6	6+	6	6	7		0	2	
5	7-	6+	6o	7-	6	6	6	6	6+	5		5		2	3	
6	7-	5o	5o	4+	7	6	5	6	5o	4		4		(4)	(5)	
7	3+	4-	5-	5-	2	3	5	5	(4o)	4		4		(5)	(4)	
8	5o	2+	4-	4-	4	2	2	2	(3+)	4		4		(6)	(6)	
9	3+	4-	5+	6o	3	3	5	5	(4+)	5		5		(4)	2	
10	6+	4+	6+	6+	6	5	6	6	6-	5		5		3	3	
11	6-	2+	5o	6-	6	4	4	5	(4+)	6		6		(5)	3	
12	6-	4+	4-	6o	5	5	5	5	5-	5		5		3	3	
13	6+	6-	6+	6+	6	5	6	6	6o	6		6		2	3	
14	6o	5o	6o	6+	6	5	5	6	6-	4		4		(4)	2	
15	7-	6+	6o	7-	6	6	6	6	6+	3		3		2	2	
16	7-	6o	6o	6o	7	6	6	4	6+	4		4		2	(6)	
17	6+	5+	5+	6o	4	5	6	5	6-	4		4		3	3	
18	6+	6-	6o	6+	5	5	6	6	6o	6		6		2	1	
19	7-	6-	6+	7-	6	6	6	6	6+	6		6		2	1	
20	7-	5o	6o	7-	7	6	6	5	6o	6		6		1	1	
21	7o	6o	7-	7-	5	5	6	6	7-	4		4		2	2	
22	7-	7-	7-	7-	6	6	6	6	7-	4		4		0	3	
23	7o	6+	7-	6+	7	6	6	5	7-	5		5		1	(5)	
24	6o	4+	6-	6-	5	5	5	6	5o	6		6		(4)	3	
25	5o	4+	6o	7-	5	3	6	6	5+	6		6		3	3	
26	6-	4+	6o	6+	6	5	6	6	5+	5		5		(4)	3	
27	6-	5o	6+	7-	6	5	6	6	6o	6		6		2	3	
28	7-	6-	7-	7-	6	6	7	7	6+	6		6		3	3	
29	5+	5o	7-	6+	6	4	5	6	6-	7		7		(5)	(5)	
30	6o	5-	6o	6+	5	5	5	6	6-	7		7		(4)	3	
31	6o	5+	7-	7-	6	5	6	6	6o	7		7		3	3	
Score: Quiet Periods				P	13	11	18	14		11		9				
				S	13	8	10	13		8		13				
				U	1	0	1	1		1		2				
				F	1	0	0	1		6		2				
Disturbed Periods				P	1	1	0	0		2		1				
				S	2	8	1	0		2		2				
				U	0	2	1	1		0		0				
				F	0	1	0	1		1		2				

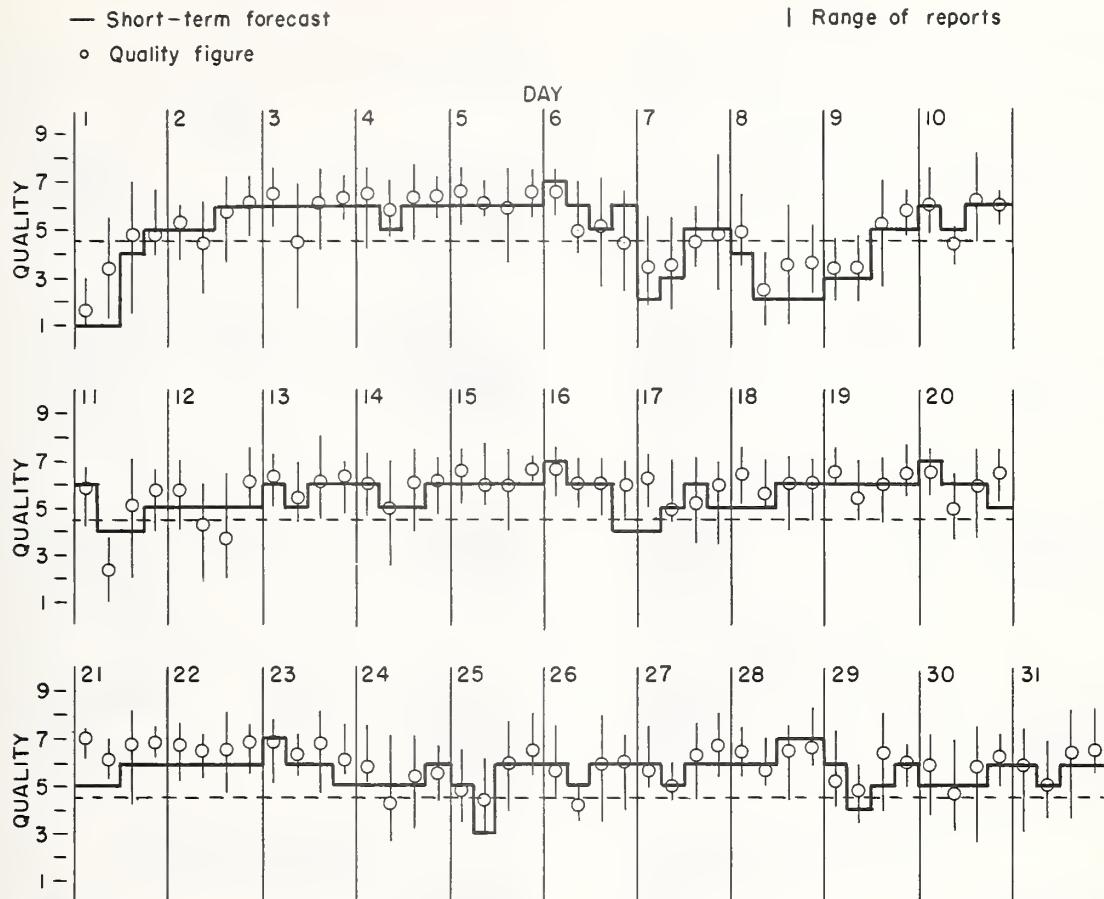
() represent disturbed values.

All times are Universal time (UT).

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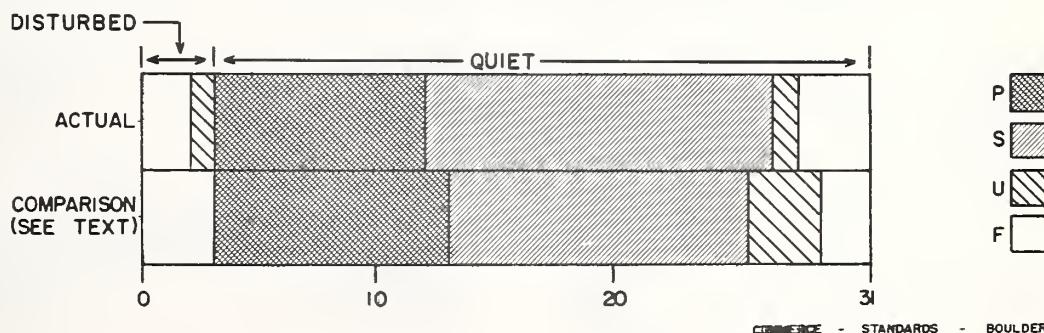
NORTH ATLANTIC

MAY 1960



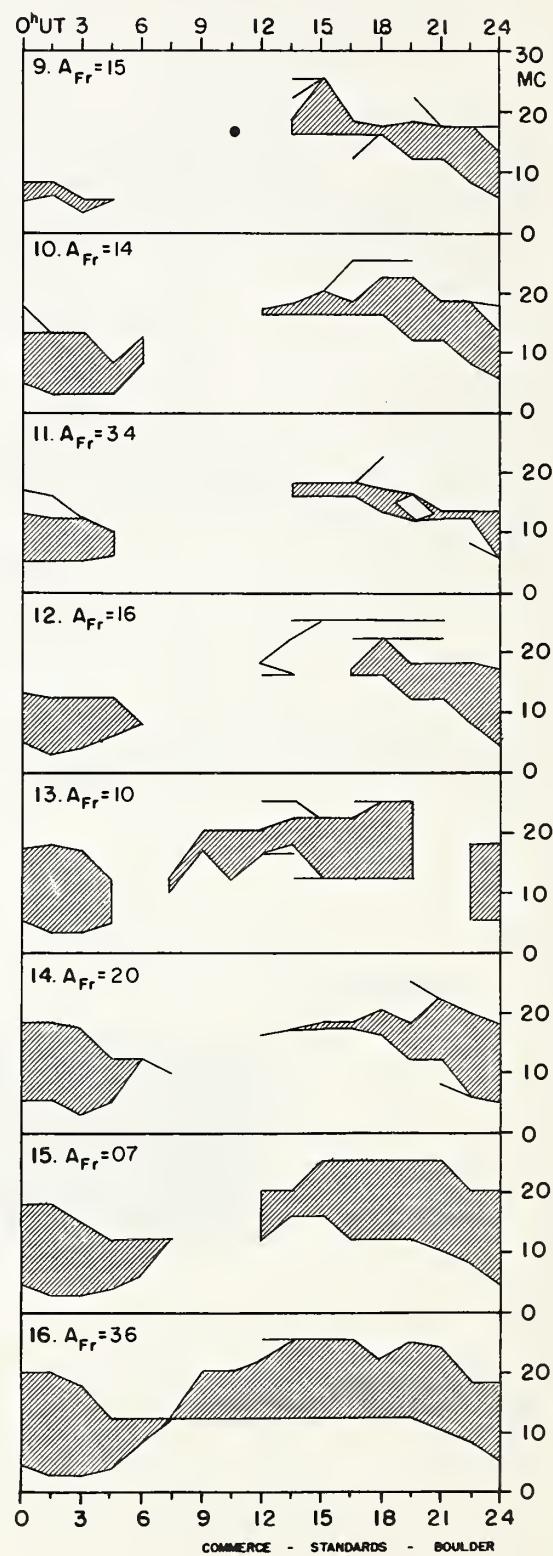
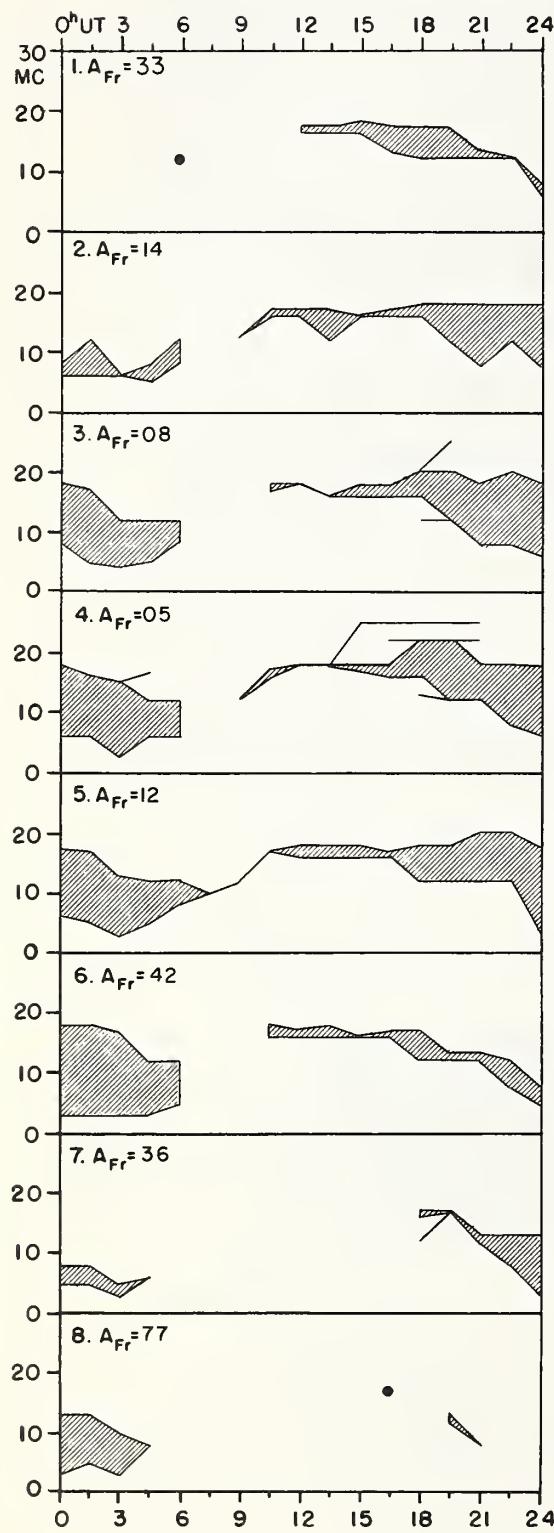
OUTCOME OF ADVANCED FORECASTS

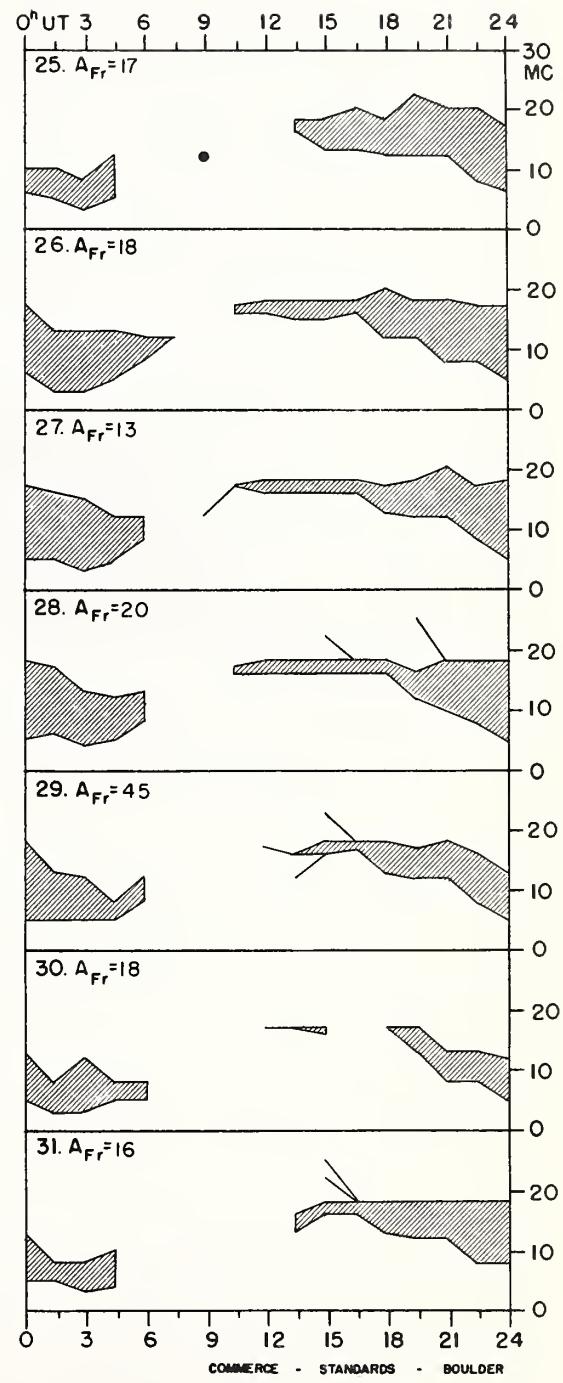
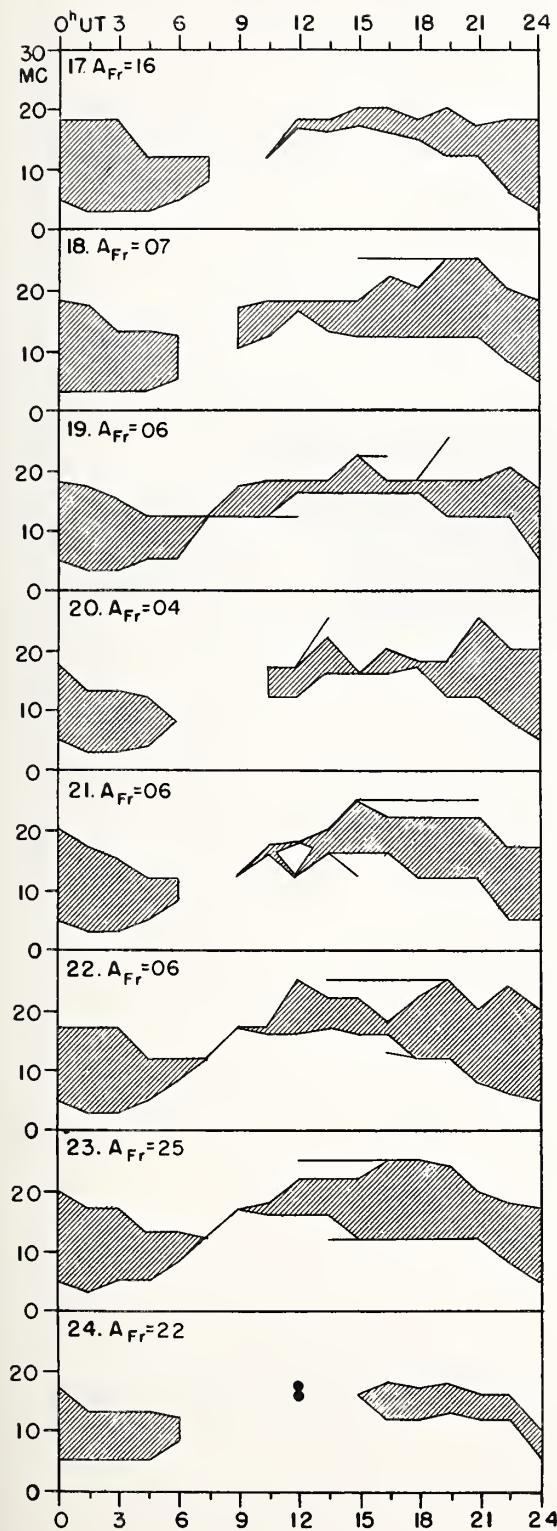
FINAL ESTIMATE



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

MAY 1960





CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

MAY 1960

May 1960	North Pacific 12-hourly quality figures		Short-term forecasts issued at		Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:					Geomagnetic K _{SI}			
	0700 to 1900	1900 to 0700	0600	1800		1-7 days	1-7 days	1-3 days	1-7 days	Final Jps	SDW	JP	Half Day (1)	Day (2)
1	5	5	4	5	(4)	2		2	5				(5)	3
2	5	6	5	6	6	4		4	6				3	2
3	6	6	6	5	6	6		6					3	1
4	6	6	6	6	6	6		6					1	2
5	6	6	6	7	6	5		5					2	3
6	5	4	6	5	5	4			4				(4)	(6)
7	5	5	3	5	(4)	6			6				(6)	(4)
8	2	4	3	3	(2)	6			6				(5)	(7)
9	5	5	5	6	5	6			6				3	3
10	6	5	6	6	6	6			6				2	3
11	5	4	3	6	5	6			6				(6)	3
12	6	5	5	6	5	5			5				(4)	3
13	6	6	6	6	6	5			5				2	2
14	6	6	6	6	6	5			5				3	2
15	6	6	6	5	6	3		3	6				2	2
16	6	6	7	7	6	4		4	6				2	(4)
17	6	7	6	7	6	5		5	6				3	2
18	6	5	7	7	7	6		6	6				2	2
19	6	5	7	7	6	7			7				2	1
20	6	7	7	6	6	7			7				0	1
21	7	7	7	7	7	5			5				1	2
22	6	5	7	7	6	5			5				0	2
23	7	6	7	7	7	6			6				1	(4)
24	6	6	5	6	6	6			6				(4)	(4)
25	6	6	6	6	6	6			6				(4)	(4)
26	6	6	5	6	6	6			6				(4)	3
27	6	6	6	7	6	6			6				(4)	2
28	7	7	6	6	7	6			6				2	2
29	4	5	4	5	5	5			6				(4)	(4)
30	5	6	6	5	5	6			6				(4)	3
31	6	6	5	6	6	6			6				2	2
Score:		Quiet Periods		P 14	13	9								
				S 13	12	15								
				U 0	3	1								
				F 2	0	3								
Disturbed Periods				P 1	0	0								
				S 1	2	0								
				U 0	0	1								
				F 0	1	2								

() represent disturbed values.

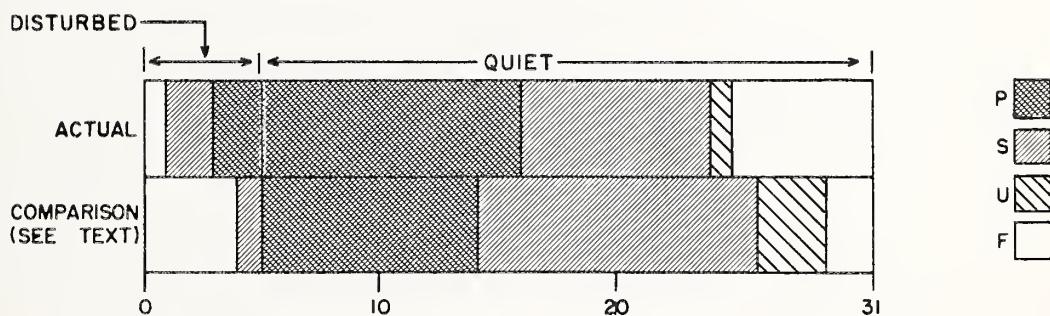
All times are Universal time (U.T.)

NORTH PACIFIC

MAY 1960

OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

JUNE 1960

Issued Day/Time UT June 1960	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
4/0532	Ft. Belvoir, Magnetic Storm 04/02XXZ			
4/1600		71	Magnetic Storm 04/02XXZ	Start Special World Interval
5/1600		72		Continue Special World Interval
6/1600		73		Finish Special World Interval
11/0415	Burbank, Solar Flare 11/0120Z			
25/1445	Sacramento Peak, Solar Flare 25/1250Z			
27/0433	Ft. Belvoir, Magnetic Storm 27/0145Z			
27/1600		74	Magnetic Storm 27/0145Z	
29/1957	Ft. Belvoir, Magnetic Storm 29/1937Z			
29/1600		75	Magnetic Storm 29/1937Z	

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